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INDEX

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## A

Accidents, Automobile	
Edward H. Files, M.D., Cedar Rapids.....	606
Accidents, Farm	
Ransom D. Bernard, M.D., Clarion.....	601
Accidents, Industrial	
Harold A. Spilman, M.D., Ottumwa.....	608
Aene Vulgaris, The Modern Conception and Management of	
Maurice Henry Noun, M.D., Des Moines.....	201
Acute Fibrinopurulent Pericarditis	
F. P. McNamara, M.D., and Tom Younan, B.A., Dubuque.....	453
Acute Glomerular Nephritis; a report of sixty-eight cases	
Leonard M. Folkers, M.D., Iowa City.....	552
Acute Methemoglobinemia Following Exposure to Meta-Dinitrobenzene and Meta-Nitroaniline	
B. B. Clark, Ph.D., and W. D. Paul, M.D., Iowa City.....	449
Acute Nephritis in Children, Treatment of	
C. Anderson Aldrich, M.D., Winnetka, Illinois.....	471
Acute Staphylococic Kidney	
Gerald V. Caughlan, M.D., Council Bluffs.....	664
Adequate Records and General Office Management	
Edward F. Hagen, M.D., Decorah.....	671
Advances in Internal Medicine in 1934	
J. Stuart McQuiston, M.D., Cedar Rapids.....	180
Allergic Manifestations of the Nose and Throat, The Management of	
John J. Shea, M.D., Memphis, Tennessee.....	193
Allergic Patients, Respiratory Infection in.....	620
Allergy Clinic at the University Hospital, 1933-1934, Statistical Study of Cases Seen in the	
Julia Cole, M.D., Iowa City.....	479
Alumni Luncheon, University of Illinois.....	265
Ambulant Treatment of Hernia, The	
Arthur F. Bratrud, M.D., Minneapolis, Minnesota.....	591
Amebiasis	
James Stuart McQuiston, M.D., Cedar Rapids.....	597
Amebiasis—A Report of Six Cases	
A. E. Feller, M.D., and James A. Greene, M.D., Iowa City.....	437
American Association for the Study of Goiter.....	311
American Association for the Study of Goiter Again Offers Prize	
.....	44
American Child Health Association.....	37
American College of Surgeons, Sectional Meeting.....	99
American Medical Association, Chicago, February 15, 16, 1935, Special Session, House of Delegates.....	152
American Medical Association, Scientific Exhibits.....	37
American Medical Association, The	
Walter L. Bierring, M.D., Des Moines.....	327
American Medical Golfers Play in Atlantic City, Monday, June 10th	
.....	265
American Neisserian Medical Society, The.....	311
American-Public Health Association to Meet in Milwaukee.....	501
Anemias, Classification of the	
Victor E. Levine, M.D., Omaha, Nebraska.....	198
Anemia, Erythroblastic	
Dennis H. Kelly, M.D., and Lee Forrest Hill, M.D., Des Moines.....	9
Anesthesia, Spinal	
Paul A. White, M.D., Davenport.....	239
Annals of Medical History.....	213
Anomaly of Finger and Toe Nails, Onychauxis	
William Rankin, M.D., Keokuk.....	206
Annual Congress on Medical Education, Hospitals and Licensure, The	
.....	156
Annual Meeting, The Iowa Tuberculosis Association and Iowa Heart Association	
.....	149
Annual Session, Program of the Eighty-fourth.....	169
Aortitis, Sudden Deaths from Syphilitic	
F. P. McNamara, M.D., Dubuque.....	147
Appendicitis, Chronic	
Glenn C. Blome, M.D., Ottumwa.....	244
Appendicitis, Some New Factors in the Diagnosis of Acute	
Clark N. Cooper, M.D., Waterloo.....	654
Arent, Adolph A., 1873-1935.....	465
Arterial Hypotension to Surgical Risk, The Relationship of	
J. Stuart McQuiston, M.D., Cedar Rapids.....	331
Arthritis, The Eye, Ear, Nose and Throat Aspect of	
J. K. von Lackum, M.D., Cedar Rapids.....	65
Arthritis, The Orthopedic Phase of	
Arch F. O'Donoghue, M.D., Sioux City.....	68
Arthritis, Symposium on, General Considerations	
John C. Parsons, M.D., Creston.....	61
Ascites; Carcinoma of the Pancreas; Carcinomatous Thrombus of the Portal Vein	
B. A. Michel, M.D., A. C. Pfohl, M.D., and Tom Younan, B.A., Dubuque	
.....	498
Aspiration Treatment of Empyema in Children	
Robert A. Strong, M.D., New Orleans, Louisiana.....	334
Asthma from Dinitrophenol Sensitization	
Maurice Henry Noun, M.D., Des Moines.....	610
AUTHORS—	
Albright, George C.....	233
Aldrich, C. Anderson.....	471
Anderson, N. Boyd.....	236, 531
Atchison, Mary M.....	614
Barer, C. Gregory.....	342
Bennett, A. E.....	635
Bernard, Ransom D.....	601
Beye, Howard L.....	187
Bierring, Walter L.....	34, 97, 150, 209, 230, 266, 312, 327, 350, 456, 502, 557, 617, 679, 684
Blome, Glenn C.....	244
Bratrud, Arthur F.....	591
Burcham, Thomas A.....	232
Caughlan, Gerald V.....	664
Chase, Sumner B.....	252, 576
Clark, B. B.....	449
Cohen, Raymond.....	547
Cole, Julia.....	479
Conzett, Donald C.....	139
Cooley, Laurence E.....	30
Cooper, C. N.....	231, 654
Dierker, Bernard J.....	304
Dimsdale, L. J.....	448
Dittmer, Martin G.....	553
Downing, James A.....	192
Drueck, Charles J.....	285
Dulin, J. W.....	497
Dunn, James.....	17
Dyson, James E.....	29, 450
Ellyson, C. W.....	87
Entz, F. Harold.....	668
Eriksen, L. G.....	309, 553
Farnsworth, H. E.....	23
Feller, A. E.....	437, 549
Files, Edward H.....	606
Folkers, Leonard M.....	552
Foster, Wayne J.....	577
Fowler, W. M.....	115
Frank, Louis J.....	283
Freund, Ernst.....	675
Fritz, L. H.....	207
Gibbon, W. H.....	231
Gibson, Douglas N.....	76
Gillies, Carl L.....	15, 530
Gittins, T. R.....	481
Glesne, Otto N.....	79
Gordon, Arnold M.....	92
Gradle, Harry S.....	573
Greene, James A.....	437
Greenleaf, William S.....	137
Grossman, Raymond S.....	638
Hagen, Edward F.....	671
Hambrecht, Fred E.....	496
Hanchett, McMicken.....	259
Hancock, John C.....	225
Harkness, Gordon F.....	1, 281, 521
Hartman, Howard J.....	440
Hayek, J. M.....	27
Hill, James C.....	442
Hill, Lee Forrest.....	9
Howell, E. B.....	134
Hurevitz, H. M.....	115
Jenkins, George DeWayne.....	488
Jensen, Arnold L.....	196



Johnson, J. A. William.....	307
Jordan, Carl F.....	142, 536
Kelly, Dennis H.....	9
Kerr, H. Dabney.....	129
Korns, H. M.....	549
Krause, Charles S.....	303
Lamb, Frederick H.....	340, 651
Larimer, R. N.....	242
Levine, Victor E.....	198
Link, Martha M.....	19
Losh, C. W.....	540
Lott, Robert H.....	190
Lytle, C. C.....	207
Marker, John I.....	297
McNamara, F. P.....	147, 262, 433, 453, 675
McQuiston, J. Stuart.....	180, 331, 597
Melgaard, Bennett A.....	345
Meyer, M. G.....	491
Michel, B. A.....	498
Middleton, William S.....	427
Mitchell, Edwin D.....	124
Naftzger, J. B.....	80
Noonan, J. J.....	131
Noun, Maurice Henry.....	201, 610
Obermann, Charles F.....	446
O'Brien, Willis J.....	583
O'Donoghue, Arch F.....	68
Page, A. C.....	287
Parsons, John C.....	61
Paul, W. D.....	449, 643
Peck, John H.....	183
Pfohl, A. C.....	498, 614
Plass, E. D.....	293, 586
Priestley, Joseph B.....	547
Purdy, William O.....	493
Rankin, William.....	206
Rathe, H. W.....	203
Ruth, Verl A.....	337
Rutherford, C. W.....	7
Sampson, Carl E.....	247
Sanders, W. E.....	524
Scott, H. W.....	292
Schultz, Albert A.....	661
Shaw, Ernest E.....	528
Shea, John J.....	193
Shirley, Hale F.....	611
Smith, Harry L.....	59
Spilman, Harold A.....	608
Stahr, Roland.....	475
Strawn, John T.....	299
Strong, Robert A.....	334
Stroy, H. E.....	145
Theisen, Roy I.....	14, 94, 648
Thompson, H. E.....	347
Throckmorton, Jeannette Dean.....	694
Treynor, Jack V.....	477
von Graff, Erwin.....	118
von Lackum, J. K.....	65
Waterbury, Charles A.....	21
Weingart, Julius S.....	32
West, Leonard A.....	90
Weston, B. Raymond.....	658
White, Paul A.....	239
Willius, Frederick A.....	59
Younan, Tom.....	453, 498
Automobile Accidents	
Edward H. Files, M.D., Cedar Rapids.....	606
Autopsy, The	
John C. Hancock, M.D., Dubuque.....	225
Auxiliary News	
.....	46, 104, 216, 273, 319, 420, 462, 513, 564, 622, 689
Average Iowa Physician, An.....	559

## B

Basic Science Bill, Discussion on the.....	155
Bendixen, Peter Alfred, 1882-1934.....	55
Birthday Clinic, Dr. Rohlf's.....	108

## Bleeding Peptic Ulcer

W. M. Fowler, M.D., and H. M. Hurevitz, M.D., Iowa City.....	115
Board of Examiners in the Basic Sciences, The.....	507
Book Shelf, The Journal.....	
.....	56, 113, 167, 223, 279, 325, 425, 469, 519, 571, 630, 698
Borden Company, Director of Medical Relations, The.....	44
Breast, Carcinoma of the	
J. J. Noonan, M.D., Marshalltown.....	131
Broadcast Program, Special Medical.....	100
Broadlawn General Hospital, Des Moines, Iowa, Report of	
Cases from .....	32, 555
Bronchial Asthma, The Heart in	
W. D. Paul, M.D., Iowa City.....	643
Bronchoscopy to Thoracic Surgery, The Relationship of	
James A. Downing, M.D., Des Moines.....	192
Business Side of the Practice of Ophthalmology and Otolaryngology, The	
Sumner B. Chase, M.D., Fort Dodge.....	576

## C

Cancer Cure Vendor Dies with Cancer.....	166
Cancer Problem, The Historic Background of the	
W. E. Sanders, M.D., Des Moines.....	524
Carcinoma of the Breast	
J. J. Noonan, M.D., Marshalltown.....	131
Carcinoma of the Colon	
F. P. McNamara, M.D., Dubuque.....	675
Carcinoma of the Colon, Symposium on	
Diagnosis and Symptomatology, Ernest E. Shaw, M.D.,	
Indianola .....	528
X-ray Diagnosis of Carcinoma of the Colon, The, Carl L.	
Gillies, M.D., Iowa City.....	530
Surgical Treatment of Carcinoma of the Colon, N. Boyd	
Anderson, M.D., Des Moines.....	531
Carcinoma of the Pancreas; Carcinomatous Thrombus of the	
Portal Vein; Ascites	
B. A. Michel, M.D., A. C. Pfohl, M.D., and Tom Younan,	
B.A., Dubuque .....	498
Carcinoma of the Skin, Curability of	
L. G. Ericksen, M.D., Dubuque.....	309
Cardiac Failure, The Salient Features in the Treatment of	
H. W. Rathe, M.D., Waverly.....	203
Cardiac Insufficiency in Obese Individuals	
Harry L. Smith, M.D., and Frederick A. Willius, M.D.,	
Rochester, Minnesota .....	59
Carpal Scaphoid, Fracture of	
J. A. William Johnson, M.D., Newton.....	307
Case Reports .....	29, 92, 94, 206, 307, 450, 610
Cecum, Submucous Lipoma of the	
Arnold M. Gordon, M.D., Des Moines.....	92
Cesarean Sections in Iowa for the Years 1930, 1931 and 1932,	
A Survey of	
E. D. Plass, M.D., Iowa City.....	586
Chest, Non-tuberculous Infections of the	
John H. Peck, M.D., Des Moines.....	183
Child Development and Parent Education Conference.....	270
Child Nature and the Child's Emotional Needs	
Martha M. Link, M.D., Dubuque.....	19
Cholecystography	
W. H. Gibbon, M.D., Sioux City, and C. N. Cooper, M.D.,	
Waterloo .....	231
Christian Scientists Oppose State Medicine.....	99
Chronic Appendicitis	
Glenn C. Blome, M.D., Ottumwa.....	244
Chronic Encephalitis, Some of the Clinical Manifestations of	
C. Gregory Barer, M.D., Iowa City.....	342
Chronic Intestinal Obstruction Due to Intussusception of the	
Ileum	
Mary M. Atchison, M.D., and A. C. Pfohl, M.D., Dubuque.....	614
Claims for Irradiated Evaporated Milk.....	40
Classification of the Anemias	
Victor E. Levine, M.D., Omaha, Nebraska.....	198
Clinical Laboratory and Laboratory Fees—A Resolution, The.....	211
Clinical Notes from the College of Medicine.....	496, 549, 611, 673
Collection Agency Not Approved.....	99
College of Medicine, New Dean, University of Iowa.....	422

Colleges to Debate Medical Economics.....	315
Colles' Fracture	
Douglas N. Gibson, M.D., Des Moines.....	76
Colon, Surgical Procedures for Neoplasms of the Right Half of the	
Charles S. Krause, M.D., Cedar Rapids.....	303
Committee on Military Affairs, Resolutions from.....	44
Compensation Cases, New Regulations for Federal Employees'.....	455
Complications of Specific Urethritis	
George DeWayne Jenkins, M.D., Burlington.....	488
Congenital Absence of One Kidney	
F. Harold Entz, M.D., Waterloo.....	668
Congenital Heart Disease	
Otto N. Glesne, M.D., Fort Dodge.....	79
Congress on Industrial Accidents and Diseases.....	112
Conjunctivitis in the Newborn	
C. W. Rutherford, M.D., Iowa City.....	7
Conserving the Sight of School Children.....	352
Constipation, The Management of Functional	
Albert A. Schultz, M.D., Fort Dodge.....	661
Contraception .....	39
Convalescent Serum .....	311
Coronary Thrombosis in a Young Individual, Longevity after	
Laurence E. Cooley, M.D., Dubuque.....	30
Correction .....	518
Correspondence .....	697
Council Bluffs Plan of Immunization Against Diphtheria, The	
Council Meeting .....	678
Council on Physical Therapy, The.....	560
Curability of Carcinoma of the Skin	
L. G. Ericksen, M.D., Dubuque.....	309
Cyanosis in an Infant Five Weeks of Age	
James E. Dyson, M.D., Des Moines.....	29
Cystadenoma of the Ovary, Papillary	
C. W. Ellyson, M.D., Waterloo.....	87

D

Dangerous Drugs .....	269
Davenport—The 1935 Convention City.....	178
Death Notices .....	51, 108, 162, 219, 275, 321, 422, 465, 515, 567, 625, 693
Delegates to the American Medical Association, Report of.....	561
Dermatitis, Ragweed	
Louis J. Frank, M.D., Sioux City.....	283
Diabetes, Diet in the Treatment of	
R. N. Larimer, M.D., Sioux City.....	242
Diagnosis and Symptomatology; carcinoma of the colon	
Ernest E. Shaw, M.D., Indianola.....	528
Diagnosis of Gastric Malignancy	
John T. Strawn, M.D., Des Moines.....	299
Diarrhea, The Rational Treatment of	
Bennett A. Melgaard, M.D., Sioux City.....	345
Diet in the Treatment of Diabetes	
R. N. Larimer, M.D., Sioux City.....	242
Differential Diagnosis in Periodic Types, Headache:	
T. R. Gittins, M.D., Sioux City.....	481
Dinitrophenol Not Harmless.....	315
Diphtheria, The Council Bluffs Plan of Immunization Against.	
Director of Medical Relations, The Borden Company.....	44
Disaster and Life Saving Services of the Red Cross.....	619
Discussion on the Basic Science Bill.....	155
Doctors Needed .....	352
Dr. Rohlf's Birthday Clinic.....	108
Dr. Wangenstein, Prize to.....	562
Drug Cases Bring High Fines.....	460

E

Eighth Annual Graduate Fortnight, New York Academy of Medicine .....	567
Eighty-fourth Annual Session, Program of the.....	169
Empyema in Children, Aspiration Treatment of	
Robert A. Strong, M.D., New Orleans, Louisiana.....	334
Empyema, The Treatment of	
Robert H. Lott, M.D., Carroll.....	190
Encephalitis and Meningitis in the Newborn	
H. E. Farnsworth, M.D., Storm Lake.....	23

Encephalitis, Some of the Clinical Manifestations of Chronic	
C. Gregory Barer, M.D., Iowa City.....	342
Endothelioma (Intra-Orbital Meningioma) of the Optic Nerve Sheath	
H. E. Thompson, M.D., Dubuque.....	347
Erythroblastic Anemia	
Dennis H. Kelly, M.D., and Lee Forrest Hill, M.D., Des Moines .....	9
Eugenic Sterilization Legalized.....	155
Evaporated Milk, Claims for Irradiated.....	40
Eye, Ear, Nose and Throat Aspect of Arthritis, The	
J. K. von Lackum, M.D., Cedar Rapids.....	65
Eye, Injuries of the	
Harry S. Gradle, M.D., Chicago, Illinois.....	573

F

Facts, Impressions Versus.....	38
Farm Accidents	
Ransom D. Bernard, M.D., Clarion.....	601
Federal Food Law Enforcement.....	37
Femoral Fractures, Russell's Traction for	
Fred E. Hambrecht, M.D., Iowa City.....	496
Finley Hospital Clinicopathologic Conferences, The.....	30, 94, 147, 207, 262, 309, 347, 398, 453, 553, 614, 675
Food and Drug Research Expanded to Study Vitamins and Pharmacology .....	455
Fracture of Carpal Scaphoid, with report of case	
J. A. William Johnson, M.D., Newton.....	307
Fracture of the Middle Third of the Radius, Isolated Non-Reducible	
Arnold L. Jensen, M.D., Council Bluffs.....	196
Fractures in the Region of the Wrist in Childhood, Puberty and Adolescence	
Carl L. Gillies, M.D., Iowa City.....	15
Fractures of the Humerus, Supracondylar	
Verl A. Ruth, M.D., Des Moines.....	337
Fundamental Pathology in Progressive Tuberculosis, Primary and Reinfection	
F. P. McNamara, M.D., Dubuque.....	433

G

Gastric Malignancy, Diagnosis of	
John T. Strawn, M.D., Des Moines.....	299
Gastro-enterological Association Adopts Official Publication..	99
General Considerations: Arthritis	
John C. Parsons, M.D., Creston.....	61
General Health Good in 1934.....	101
Golf Tournament, Pre-convention.....	96
Group Organization	
Gordon F. Harkness, M.D., Davenport.....	281

H

Headache: Differential Diagnosis in Periodic Types	
T. R. Gittins, M.D., Sioux City.....	481
Health Insurance Is Not the Remedy	
James C. Hill, M.D., Newton.....	442
Heart and Athletics, The	
Raymond S. Grossman, M.D., Marshalltown.....	638
Heart Disease, Congenital	
Otto N. Glesne, M.D., Fort Dodge.....	79
Heart in Bronchial Asthma, The	
W. D. Paul, M.D., Iowa City.....	643
Heart Disease in Pregnancy	
Roy I. Theisen, M.D., Dubuque.....	648
Hemopoietic Diseases of the Nervous System	
Frederick H. Lamb, M.D., Davenport.....	340
Hemorrhage in Ophthalmology and Otolaryngology, The Management of	
Wayne J. Foster, M.D., Cedar Rapids.....	577
Hernia, The Ambulant Treatment of	
Arthur F. Bratrud, M.D., Minneapolis, Minnesota.....	591
Highlights of the A.M.A. Meeting.....	349

Historic Background of the Cancer Problem, The	
W. E. Sanders, M.D., Des Moines.....	524
History of Medicine in Iowa.....	
.....52, 109, 163, 220, 276, 322, 423, 466, 516, 568, 626, 694	
History of Medicine in Jefferson County, Iowa.....	
.....52, 109, 163, 220, 276, 322, 423, 466, 516, 568, 626, 697	
History of the State Society of Iowa Medical Women	
Jeannette Dean-Throckmorton, M.D., Des Moines.....	694
History Repeats Itself.....	40
Hospitalization of the Mentally Ill.....	275
Hypoglycemia, A Case Report of Spontaneous	
Roy I. Theisen, M.D., Dubuque.....	94
Hypothyroidism in Pregnancy	
William O. Purdy, M.D., Des Moines.....	493

## I

Icterus Gravis Neonatorum	
James E. Dyson, M.D., Des Moines.....	450
Immunization Against Diphtheria, The Council Bluffs Plan of 42	
Imposter Posing as Doctor's Son.....	678
Impressions Versus Facts.....	38
Income Tax as It Affects Professional Men, The Personal.....	102
Income Tax Provisions.....	681
Income Tax, The State Personal.....	41
Industrial Accidents	
Harold A. Spilman, M.D., Ottumwa.....	608
Industrial Accidents and Diseases, Congress on.....	112
Infections of the Hand, Proper Drainage of	
McMicken Hanchett, M.D., Council Bluffs.....	259
Infective Thrombophlebitis Secondary to Neck Infections	
Sumner B. Chase, M.D., Fort Dodge.....	252
Injuries of the Eye	
Harry S. Gradle, M.D., Chicago, Illinois.....	573
Integration of the Medical Profession.....	458
Interesting News—In Brief.....50, 107, 161, 218, 421, 464	
International Assembly of the Inter-State Postgraduate	
Medical Association of North America.....	556
International Meeting, An.....	166
Inter-State Postgraduate Medical Association of North	
America.....	510
Intra-Orbital Meningioma (Endothelioma) of the Optic Nerve	
Sheath	
H. E. Thompson, M.D., Dubuque.....	347
Intra-Urethral Prostatectomy	
B. Raymond Weston, M.D., Mason City.....	658
Iowa Tuberculosis Association and Iowa Heart Association,	
Annual Meeting.....	149
Irradiated Evaporated Milk, Claims for.....	40
Irradiation Treatment of Superficial Malignancies	
H. Dabney Kerr, M.D., Iowa City.....	129
Is "Doc" Richards in Iowa?.....	101
Isolated Non-Reducible Fracture of the Middle Third of the	
Radius	
Arnold L. Jensen, M.D., Council Bluffs.....	196

## J

Journal Book Shelf, The.....	
.....56, 113, 167, 223, 279, 325, 425, 469, 519, 571, 630, 698	
Jugular Thrombosis Following Tonsillar Infection	
F. P. McNamara, M.D., Dubuque.....	262

## L

Ladies and Gentlemen—Your Health!.....	559
Law Enforcement, Federal Food.....	37
Leaves from a Doctor's Notebook	
George C. Albright, M.D., Iowa City.....	233
Legalized Eugenic Sterilization.....	155
Leukemia, X-Ray Therapy in	
Lester G. Ericksen, M.D., Dubuque, and Martin G.	
Dittmer, M.D., Colesburg.....	553
Lobe Differential Count, Reasons and Technic for the	
Frederick S. Lamb, M.D., Davenport.....	651

Longevity after Coronary Thrombosis in a Young Individual	
Laurence E. Cooley, M.D., Dubuque.....	30
Loyalty to Your State Society.....	211

## M

Making Scientific News Attractive.....	506
Malpractice	
Edwin D. Mitchell, Attorney, Council Bluffs.....	124
Malpractice, Precautions Against	
Willis J. O'Brien, Attorney, Des Moines.....	583
Management of Allergic Manifestations of the Nose and	
Throat, The	
John J. Shea, M.D., Memphis, Tennessee.....	193
Management of Cases of Apparent Sterility, The	
Bernard J. Dierker, M.D., Fort Madison.....	304
Management of Functional Constipation	
Albert A. Schultz, M.D., Fort Dodge.....	661
Management of Hemorrhage in Ophthalmology and Otolaryng-	
ology	
Wayne J. Foster, M.D., Cedar Rapids.....	577
Management of Respiratory Infections from the Standpoint	
of Ventilation and Drainage	
Jack V. Treynor, M.D., Council Bluffs.....	477
Marriages.....51, 162, 219, 321, 465, 515, 567, 625	
Mastoids, Two	
Carl E. Sampson, M.D., Creston.....	247
Mayo Foundation Lectures.....	112, 562
Medical Broadcast Program, Special.....	100
Medical Education, Hospitals and Licensure, The Annual	
Congress on.....	156
Medical Publishers Celebrate 150th Anniversary.....	460
Medical Relief in Iowa.....	100
Medical Relief Program.....	153, 219
Medicine—A Profession or a Trade.....	268
Melanomas and Melanosarcomas	
J. W. Dulin, M.D., Iowa City.....	497
Membership.....	317, 422
Meningitis in the Newborn, Encephalitis and	
H. E. Farnsworth, M.D., Storm Lake.....	23
Meningococcus Septicemia	
Julius S. Weingart, M.D., Des Moines.....	32
Methods of Treatment in Malpositions of the Uterus	
Donald C. Konzett, M.D., Dubuque.....	139
Minutes of the Iowa State Medical Society, Eighty-fourth	
Annual Session.....	353
Mississippi Valley Medical Society.....	316, 515
Modern Conception and Management of Acne Vulgaris	
Maurice Henry Noun, M.D., Des Moines.....	201
Modern Weapons Aid Physicians in Fight on Tuberculosis.....	214
Mucous Colitis—Its Clinical Study	
Charles J. Drueck, M.D., Chicago, Illinois.....	285

## N

Narcotic Problem, The.....	314
National Discount and Audit Company.....	316
Neck Infections, Infective Thrombophlebitis Secondary to	
Sumner B. Chase, M.D., Fort Dodge.....	252
Neoplasms of the Right Half of the Colon, Surgical Procedures	
for	
Charles S. Krause, M.D., Cedar Rapids.....	303
Nephritis in Children, Treatment of Acute	
C. Anderson Aldrich, M.D., Winnetka, Illinois.....	471
Nephropexy, Indications for, Operative Procedure and Results	
C. W. Losh, M.D., Des Moines.....	540
New Book on Tuberculosis.....	567
Newborn, Conjunctivitis in the	
C. W. Rutherford, M.D., Iowa City.....	7
Newborn, Encephalitis and Meningitis in the	
H. E. Farnsworth, M.D., Storm Lake.....	23
Newborn, Pulmonary Atelectasis in the	
Roy I. Theisen, M.D., Dubuque.....	14
Newborn, Respiratory Infections in the	
Charles A. Waterbury, M.D., Waterloo.....	21



Newborn, Sepsis in the	
J. M. Hayek, M.D., Cedar Rapids.....	27
Newborn, Skin Infections in the	
James Dunn, M.D., Davenport.....	17
New Dean, University of Iowa, College of Medicine.....	422
Newly Organized Mississippi Valley Medical Society, The.....	316
New Regulations for Federal Employees' Compensation Cases.....	455
New Ruling for Oculists.....	102
New Series of Special Articles, A.....	460
New York Academy of Medicine, Eighth Annual Graduate	
Fortnight.....	567
Non-Tuberculous Infections of the Chest	
John H. Peck, M.D., Des Moines.....	183
Northwest Medical Conference.....	157

## O

Obese Individuals, Cardiac Insufficiency in	
Harry L. Smith, M.D., and Frederick A. Willius, M.D.,	
Rochester, Minnesota.....	59
OBITUARIES—	
Allen, Edward Clint.....	321
Alt, Roy Colony.....	567
Arent, Adolph.....	465
Bailey, William Warnock.....	515
Beitenman, Milton Edward.....	625
Bendixen, Peter Alfred.....	51, 55
Bradley, Harry Merritt.....	515
Brown, Foster Victor.....	162
Buxton, Sr., Otho Christian.....	567
Byers, Henry V.....	108
Engle, Perry.....	422
Findley, Park A.....	422
Foxworthy, Oliver W.....	625
Graham, Dell Ewing.....	567
Harris, William.....	465
Herrick, Rubert Connor.....	693
Herrick, William Joseph.....	51
Jackson, Taylor Rice.....	567
Jordan, Marion Sparehawk.....	321
Kepler, John Clarence.....	162
Liesman, Bismark.....	108
Mangun, Harold Victor.....	625
McCarthy, Wilton W.....	51
Meyers, Jacob Franklin.....	162
Moon, Roy.....	693
Morse, John Ferdinand.....	515
Niemack, Julius.....	321
Osborn, William Shelton.....	567
Parker, Garner Foresmann.....	625
Parker, Ralph H.....	693
Payne, Harry Clemmens.....	422
Peppers, John Lewis.....	108
Rich, Louis Philip.....	321
Rockwood, Elbert William.....	465
Schooley, Alfred Heaton.....	219
Smith, Alton LeRoy.....	108
Smythe, William R.....	51
Spooner, Alexander L.....	422
Stech, James W.....	515
Stevenson, William.....	567
Wallace, Charles Melvin.....	108
Wickham, Emmet Terry.....	51
Will, Frank Arthur.....	108
Young, Henry Byrd.....	51, 54
Oculists, New Ruling for.....	102
Official Call.....	271
Old Age	
N. Boyd Anderson, M.D., Des Moines.....	236
On the Shoulders of our Ancestors.....	504
Onychiauxis, Anomaly of Finger and Toe Nails	
William Rankin, M.D., Keokuk.....	206
Open Forum, The.....	270
Organization, Group	
Gordon F. Harkness, M.D., Davenport.....	281
Organization, The Power of	
Thomas A. Burcham, M.D., Des Moines.....	282
Orthopedic Phase of Arthritis, The	
Arch. F. O'Donoghue, M.D., Sioux City.....	68

Otitis Media—Its Management	
Roland Stahr, M.D., Fort Dodge.....	475
Ovarian Cysts Following Delivery, Torsion of the Pedicle in	
Erwin von Graff, M.D., Des Moines.....	118
P	
Papillary Cystadenoma of the Ovary	
C. W. Ellyson, M.D., Waterloo.....	87
Patient-Physician Relationship Should be Maintained, The	
Howard J. Hartman, M.D., Waterloo.....	440
Pavaex Treatment at the State University of Iowa, Preliminary Report of	
H. M. Korn, M.D., and A. E. Feller, M.D., Iowa City.....	549
Pediatrics in 1934, Science Advances.....	38
Pelvic Infections, Treatment of	
A. C. Page, M.D., Des Moines.....	287
Peptic Ulcer, Bleeding	
W. M. Fowler, M.D., and H. M. Hurevitz, M.D., Iowa City.....	115
Pericarditis, Acute Fibrinopurulent	
F. P. McNamara, M.D., and Tom Younan, B.A., Dubuque.....	453
Peripheral Vascular Disease, Therapy in.....	504
Personal Income Tax as it Affects Professional Men, The.....	102
Personal Income Tax, The State.....	41
Personal Mention.....	
.....50, 108, 162, 219, 275, 321, 422, 464, 514, 566, 624, 693	
Physicians Organized for Economic Protection.....	459
Polyp of the Ileum with Double Intussusception	
C. C. Lytle, M.D., and L. H. Fritz, M.D., Dubuque.....	207
Postoperative Accidents and Complications	
E. B. Howell, M.D., Ottumwa.....	134
Postoperative Pulmonary Complications	
William S. Middleton, M.D., Madison, Wisconsin.....	427
Power of Organization, The	
Thomas A. Burcham, M.D., Des Moines.....	282
Precautions Against Malpractice	
Willis J. O'Brien, Attorney, Des Moines.....	583
Pre-Convention Golf Tournament.....	96
Pregnancy, Heart Disease in	
Roy I. Theisen, M.D., Dubuque.....	648
Pregnancy, Hypothyroidism in	
William O. Purdy, M.D., Des Moines.....	493
Preliminary Report of Pavaex Treatment at the State University of Iowa	
H. M. Korn, M.D., and A. E. Feller, M.D., Iowa City.....	549
President's Address, The	
Gordon F. Harkness, M.D., Davenport.....	521
President's Interim Report to the Members, The	
Gordon F. Harkness, M.D., Davenport.....	1
Prize to Dr. Wangenstein.....	562
Professional Medical Services Not Subject to Codes or Assessments.....	158
Program of the Eighty-fourth Annual Session.....	169
Progressive Tuberculosis, Primary and Reinfection, Fundamental Pathology in	
F. P. McNamara, M.D., Dubuque.....	433
Proper Drainage of Infections of the Hand	
McMicken Hanchett, M.D., Council Bluffs.....	259
Proper Method of Treating Uterine Cancer, The	
E. D. Plass, M.D., Iowa City.....	293
Prostatectomy, Intra-Urethral	
B. Raymond Weston, M.D., Mason City.....	658
Psychasthenia in a Child	
Hale F. Shirley, M.D., Iowa City.....	611
Psychiatrist and Internal Medicine, The	
Charles F. Obermann, M.D., Clarinda.....	446
Psychologic Approach, The.....	619
Psychotherapy in General Medicine, The Role of	
A. E. Bennett, M.D., Omaha, Nebraska.....	635
Pulmonary Atelectasis in the Newborn	
Roy I. Theisen, M.D., Dubuque.....	14
Pulmonary Infection, The Surgical Treatment of	
Howard L. Beye, M.D., Iowa City.....	187
Purpura Complicated by Cerebral Hemorrhage and Gangrene of the Lower Extremities	
M. G. Meyer, M.D., Marshalltown.....	491
Pyogenic Osteomyelitis of the Vertebral Spine	
Ernst Freund, M.D., Iowa City.....	673

R

Radio Program, A Saner.....351  
Radio Talks .....275  
Ragweed Dermatitis  
    Louis J. Frank, M.D., Sioux City.....283  
Rational Treatment of Diarrhea, The  
    Bennett A. Melgaard, M.D., Sioux City.....345  
Reasons and Technic for the Lobe Differential Count  
    Frederick H. Lamb, M.D., Davenport.....651  
Red Cross, Disaster and Life Saving Services of the.....619  
Relation of the State Department of Health to the Practice  
    of Medicine, The  
        Walter L. Bierring, M.D., Des Moines.....230  
Relationship of Arterial Hypotension to Surgical Risk, The  
    J. Stuart McQuiston, M.D., Cedar Rapids.....331  
Relationship of Bronchoscopy to Thoracic Surgery, The  
    James A. Downing, M.D., Des Moines.....192  
Report of Cases from the Broadlawns General Hospital, Des  
    Moines, Iowa .....32, 553  
Report of Delegates to the American Medical Association.....561  
Resolutions .....112  
Resolutions from the Committee on Military Affairs.....44  
Respiratory Infection in Allergic Patients.....620  
Respiratory Infections from the Standpoint of Ventilation and  
    Drainage, Management of  
        Jack V. Treynor, M.D., Council Bluffs.....477  
Respiratory Infections in the Newborn  
    Charles A. Waterbury, M.D., Waterloo.....21  
Review of Ureteral Surgery, A  
    H. W. Scott, M.D., Fort Dodge.....292  
Rocky Mountain Spotted Fever  
    H. E. Stroy, M.D., Osceola.....145  
Rocky Mountain Spotted Fever  
    Carl F. Jordan, M.D., Des Moines.....536  
Rocky Mountain Spotted Fever in Iowa  
    Carl F. Jordan, M.D., Des Moines.....142  
Roentgen Ray Considerations in Injury Cases  
    William S. Greenleaf, M.D., Atlantic.....137  
Rôle of Psychotherapy in General Medicine, The  
    A. E. Bennett, M.D., Omaha, Nebraska.....635  
Russell's Traction for Femoral Fractures  
    Fred E. Hambrecht, M.D., Iowa City.....496

S

Salient Features in the Treatment of Cardiac Failure, The  
    H. W. Rathe, M.D., Waverly.....203  
Saner Radio Program, A.....351  
Sciatic Syndrome, The  
    John I. Marker, M.D., Davenport.....297  
Science Advances Pediatrics in 1934.....38  
Scientific Exhibits, American Medical Association.....37  
Secretary's Page, The.....690  
Sectional Meeting, American College of Surgeons.....99  
Sepsis in the Newborn  
    J. M. Hayek, M.D., Cedar Rapids.....27  
Sight of School Children, Conserving the.....352  
Skin Infections in the Newborn  
    James Dunn, M.D., Davenport.....17  
Social Security Act—Proposed Plan of Operation in Iowa, The  
    Walter L. Bierring, M.D., Des Moines.....684

SOCIETY PROCEEDINGS—

Adams County .....47  
Allamakee County .....160  
Appanoose County .....514  
Audubon County .....160  
Austin Flint-Cedar Valley Medical Society.....463, 565  
Black Hawk County.....47, 105, 217, 623, 691  
Boone-Story Society .....565  
Bremer County .....47, 320  
Buchanan County .....105, 463  
Buena Vista County.....47  
Butler County .....320  
Calhoun County .....47, 217, 565  
Carroll County .....47, 105, 691  
Cass County .....47, 160  
Cerro Gordo County .....47, 105, 160, 274, 320, 421, 565

Cherokee County .....47, 105, 160, 217, 274, 320, 623  
Chickasaw County .....105  
Clarke County .....160  
Clay County .....160  
Clinton County .....48, 691  
Crawford County .....105  
Dallas-Guthrie Society .....105, 463, 623  
Davis County .....421  
Decatur County .....691  
Delaware County .....48, 565  
Dubuque County .....48, 160, 217, 274  
Emmet-Dickinson Society .....105, 421, 463  
Floyd County .....105, 217, 274, 463  
Franklin County .....48  
Fremont County .....160  
Greene County .....105  
Grundy County .....106, 514  
Hancock-Winnebago Society .....217  
Hardin County .....48, 106, 160, 514, 691  
Harrison County .....217, 274, 691  
Iowa Academy of Ophthalmology and Otolaryngology.....565  
Iowa and Illinois Central District Medical Association.....107, 275, 463, 624  
Iowa Clinical Surgical Society .....321, 566  
Iowa County .....48  
Jackson County .....691  
Jasper County .....48  
Jefferson County .....106  
Johnson County ..48, 106, 160, 217, 274, 320, 421, 565, 623  
Lee County .....217, 421  
Linn County.....106, 161, 217, 274, 320, 514, 565, 623, 691  
Louisa County .....691  
Lucas County .....565  
Madison County .....161  
Marion County .....48, 161, 274, 565, 691  
Marshall County .....48, 106, 691  
Mills County .....49, 421, 623  
Mitchell County .....320  
Monroe County .....565  
Muscatine County .....49  
Northwest Iowa Medical Society.....321, 692  
O'Brien County .....217, 463  
Osceola County .....106  
Page County .....49  
Polk County .....106, 692  
Pottawattamie County .....49, 106, 692  
Poweshiek County .....49  
Ringgold County .....49  
Sac County .....49, 218, 274, 320, 623  
Scott County.....49, 106, 161, 218, 514, 623, 692  
Second Councilor District Meeting.....218  
Shelby County .....49  
Sioux County .....49, 107, 623  
Sixth Councilor District Meeting.....218  
Southeastern Iowa Medical Society.....624  
Southwestern Iowa Postgraduate Society.....161, 218, 275  
Story County .....50  
Tama County .....50, 161, 692  
Taylor County .....107  
Tri-County Medical Society.....218  
Twin Lakes District Medical Society.....321, 421  
Union County .....107  
Upper Des Moines Medical Society.....50, 514  
Van Buren County .....50  
Wapello County .....50, 565, 623, 692  
Warren County .....161, 275  
Washington County .....50, 218, 320, 421, 623, 692  
Webster County .....107  
Winnesiek County .....50  
Woodbury County .....107, 161, 218, 623, 692  
Wright County .....50, 692  
Some Historical Aspects of Tuberculosis.....682  
Some New Factors in the Diagnosis of Acute Appendicitis  
    Clark N. Cooper, M.D., Waterloo.....654  
Some of the Clinical Manifestations of Chronic Encephalitis  
    C. Gregory Barer, M.D., Iowa City.....342  
Special Articles, A New Series of.....460  
Special Medical Broadcast Program.....100

Special Session, House of Delegates, American Medical Association, Chicago, February 15, 16, 1935.....	152
Speakers Bureau Activities .....	45, 103, 159, 215, 272, 318, 420, 461, 511, 563, 621, 688
Spinal Anesthesia	
Paul A. White, M.D., Davenport.....	239
Spontaneous Hypoglycemia, a case report of	
Roy I. Theisen, M.D., Dubuque.....	94
Staphylococic Kidney, Acute	
Gerald V. Caughlan, M.D., Council Bluffs.....	664
State Department of Health	
Walter L. Bierring, M. D., Des Moines.....	34, 97, 150, 209, 266, 312, 350, 456, 502, 557, 617, 679
State Personal Income Tax, The.....	41
State Secretaries and Editors Attend Conference.....	680
State Society of Iowa Medical Women.....	177
Statistical Study of Cases Seen in the Allergy Clinic, at the University Hospital, 1933-1934	
Julia Cole, M.D., Iowa City.....	479
Sterility, The Management of Cases of Apparent	
Bernard J. Dierker, M.D., Fort Madison.....	304
Sterilization, Legalized Eugenic.....	155
St. Louis Medical Society Invites Iowa Physicians.....	625
Strabismus	
J. B. Naftzger, M.D., Sioux City.....	80
Submucous Lipoma of the Cecum—Report of a Case	
Arnold M. Gordon, M.D., Des Moines.....	92
Sudden Deaths from Syphilitic Aortitis	
F. P. McNamara, M.D., Dubuque.....	147
Supracondylar Fractures of the Humerus	
Verl A. Ruth, M.D., Des Moines.....	337
Surgeons to Meet in Jacksonville, Florida.....	44
Surgery of the Sympathetic Nervous System.....	269
Surgical Procedures for Neoplasms of the Right Half of the Colon	
Charles S. Krause, M.D., Cedar Rapids.....	303
Surgical Treatment of Carcinoma of the Colon	
N. Boyd Anderson, M.D., Des Moines.....	531
Surgical Treatment of Pulmonary Infection, The	
Howard L. Beye, M.D., Iowa City.....	187
Survey of Cesarean Sections in Iowa for the Years 1930, 1931 and 1932, A	
E. D. Plass, M.D., Iowa City.....	586
Symposium on Arthritis.....	61

T

Testicle, The Undescended	
Joseph B. Priestley, M.D., and Raymond Cohen, M.D., Des Moines .....	547
Therapy in Peripheral Vascular Disease.....	504
Thoracic Surgery, The Relationship of Bronchoscopy to	
James A. Downing, M.D., Des Moines.....	192
Tonsillar Infection, Jugular Thrombosis Following	
F. P. McNamara, M.D., Dubuque.....	262
Torsion of the Pedicle in Ovarian Cysts Following Delivery	
Erwin von Graff, M.D., Des Moines.....	118

Transactions, House of Delegates, Iowa State Medical Society, Eighty-fourth Annual Session.....	355
Traumatic Rupture of the Kidney	
Leonard A. West, M.D., Des Moines.....	90
Treatment of Acute Nephritis in Children	
C. Anderson Aldrich, M.D., Winnetka, Illinois.....	471
Treatment of Empyema, The	
Robert H. Lott, M.D., Carroll.....	190
Treatment of Pelvic Infections	
A. C. Page, M.D., Des Moines.....	287
Tuberculosis, New Book on.....	567
Tuberculosis, Some Historical Aspects of.....	682
Two Mastoids	
Carl E. Sampson, M.D., Creston.....	247
Two Medical Meetings of Interest to Iowa Physicians.....	316

U

Undescended Testicle, The	
Joseph B. Priestley, M.D., and Raymond Cohen, M.D., Des Moines .....	547
University of Illinois Alumni Luncheon.....	265
Ureteral Surgery, A Review of	
H. W. Scott, M.D., Fort Dodge.....	292
Urethritis, Complications of Specific	
George DeWayne Jenkins, M.D., Burlington.....	488
Uterine Cancer, The Proper Method of Treating	
E. D. Plass, M.D., Iowa City.....	293
Uterus, Methods of Treatment in Malpositions of the	
Donald C. Conzett, M.D., Dubuque.....	139

V

Valvular Endocarditis with Paradoxic Emboli	
L. J. Dimsdale, M. D., Sioux City.....	448
Vitex Vitamin D Milk .....	213

W

Warning .....	678
Woman's Auxiliary, Iowa State Medical Society .....	177
Woman's Auxiliary News.....	46, 104, 216, 273, 319, 420, 462, 513, 564, 622, 689

X

X-Ray Diagnosis of Carcinoma of the Colon	
Carl L. Gillies, M.D., Iowa City.....	530
X-Ray Therapy in Leukemia	
Lester G. Ericksen, M.D., Dubuque, and Martin G. Dittmer, M.D., Colesburg .....	553

Y

Young Physician, The .....	314
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### THE PRESIDENT'S INTERIM REPORT TO THE MEMBERS

GORDON F. HARKNESS, M.D., Davenport  
President, Iowa State Medical Society, 1934-1935

The greatest asset that any organization can have is the enthusiastic cooperation of its individual membership. Our organization has but one annual meeting, and during the interim activities must necessarily be carried on through committee activities. Committee activities depend first on the zeal and initiative of committee chairmen. Thus it necessarily devolves upon a few to direct programs that may ultimately spell success or failure. What is occasionally lost from view is the first premise, the enthusiastic cooperation of the individual membership. The state organization contacts its membership through its unit organizations, the county societies. The solidity of our very foundation rests on our unit organizations. The county society is the paramount body in organized medicine. Those acting officially for the state organization are only performing for the purpose of carrying out the desires of its members. A few may initiate, but a consciousness of individual responsibility on the part of all members is necessary to carry on. Intelligent commendation or constructive criticism, each of equal importance, should receive its first test at home, and then through the home unit, the county society, the state organization can know whether it is really serving its individual membership. This in no way bars the expression of individualistic opinions.

Believing that a knowledge of present activities will be a stimulation to a consciousness of individual responsibility, I called upon committee chairmen to submit an interim report of their activities. For the sake of brevity I have taken the liberty to edit some of these reports and to make comments, which comments are, of course, only the opinion of one individual.

The trustees have held three meetings. The finances of our organization are in a very satis-

factory state. In spite of continued depression, we have, as of November 1, received in dues \$20,-782.00, as against \$19,462.68, one year previously. This attests the loyalty and faith of Iowa physicians in their state organization. Operating on a budget the Trustees each month know the exact state of the Society's finances.

The resignation of Mrs. Dorothy McCarthy, the executive secretary, was regretfully received November 1. Miss Dorothy Nelson, who has given efficient service with the Speakers Bureau, has been made acting executive secretary. Miss Mary McCord has been employed to serve as secretary to the Speakers Bureau.

The trustees, while realizing their responsibility in safeguarding the financial interest of the Society, have in the past and at the present time are willingly assuming responsibility of expenditures to an extent that will in no way hamper committee chairmen in bringing essential activities to a successful completion.

The secretary is the key man of all medical organizations, be it county or state. More thought should be given to the selection of the secretaryship than any other office. Our Society is fortunate in having a secretary who has made a real study of a secretary's duties. His work has been recognized nationally and he is now the presiding officer of the National Association of Secretaries of State Medical Societies. Comments from me on the efficiency and faithful service of our secretary, Dr. Robert L. Parker, to the medical profession of Iowa would be presumptuous. I am sure this is well known to our membership. Dr. Parker has submitted the following comments as coming from the secretary's office.

"The real work of the secretary is the coordination of all the activities of the Society. With the hearty cooperation extended by those whose activities are outlined in this report, such a duty can only be a privilege. The special province of the secretary—his pride or his despair, whichever the case may be—is the membership record of the

Society. The report which I am able to present at this time is the best indication of the loyalty of the profession in the state to their organization. Today there are fifty-eight county medical societies with their 1933 memberships fully paid for 1934. We have nineteen county societies with only one delinquent member. There are today 2,220 paid up members for 1934, as compared with 2,167 at the close of 1933. Dues are already coming in for 1935 memberships. Even at this early date we point with pride to the fact that two counties, Washington and Wright, have maintained their 1934 membership one hundred per cent for 1935. With this early encouragement, it is the hope and belief of the secretary that we shall establish a new membership record in 1935."

Dr. Ralph R. Simmons, editor of our JOURNAL, has submitted the following report to me: "Since the Annual Session of the Iowa State Medical Society, the JOURNAL has embarked upon no new projects other than the development of the department devoted to the activities of the Woman's Auxiliary. This department, under the able editorship of Mrs. Oliver J. Fay, has reflected the activities of the Auxiliary and, we believe, added to the usefulness of the JOURNAL in reporting and recording medical activities within the state. Believing that the discussion of clinical experiences in the form of case reports is particularly valuable to our readers, we have encouraged these reports from organized hospital staffs. The Finley Hospital at Dubuque and the Broadlawns General Hospital in Des Moines, through appropriate committees have supplied terse clinical reports for each issue of the JOURNAL. Reflecting a nationwide optimism in economic recovery, additional advertising material received during the past few months has materially increased our revenue from this source."

In our organization we have two groups of committees, those of the House of Delegates and those of the Council. The former are appointed by the President, subject to the approval of the House of Delegates and directly responsible to that body. The Committees of the Council are responsible first to the Council and through this body, ultimately responsible to the House of Delegates. Since we have committees appointed from two sources it is quite essential that there be close cooperation and harmony between the Council and the titular head of our Society, and I am very happy to report that this condition exists to the highest degree.

The Finance Committee exists simply as an additional check on the expenditure of Society funds. While some have contended, in view of our annual audit, that this was a superfluous committee, the

House of Delegates continued the existence of this committee. Its activities, as a rule, are only for a brief period at the end of our fiscal year. The writer feels that the continuance of the committee was a wise decision. The record of the expenditures of the Society's funds is always available to any individual member and those responsible for expenditures should always welcome a scrutiny of the same by those other than themselves. The Finance Committee serves this purpose.

The Medico-Legal Committee has a peculiar position in our Society. It is responsible for approving the expenditure of considerable sums of money. It also occupies a confidential position in relation to individual members. Its work is one that improves with experience. It is a committee upon which men with experience should be retained. Much of its work does not lend itself to a public report. We have been fortunate in the personnel of this committee, and our members can be assured of the efficient manner in which this committee continues to carry on.

The Committee on Constitution and By-Laws occupies a rather peculiar position. Its recommendations should safeguard the retention in our Constitution and By-Laws of those sections that continue to serve us efficiently. Needless tampering is neither wise nor necessary. Yet as conditions change we should accommodate ourselves to those changes. Our membership should know that if any member feels that changes in the rules under which we operate should be made, this committee stands ready to serve such members. To them should be brought such suggestions, so that reasons pro and con may be carefully considered, and the decision for acceptance or rejection be arrived at only after careful deliberation.

The Program Committee and the Committee on Arrangements for our annual meeting met in September. The section chairmen, Dr. Donald Conzett of Dubuque, surgical section, Dr. John Parsons of Creston, medical section, and Dr. Sumner Chase of Fort Dodge, eye, ear, nose and throat section have practically completed their programs. Their enthusiasm is unbounded and the results of their efforts will assure the membership a program of which I am sure we can all be very proud. We will have the honor of having with us for our meeting not only our beloved Dr. Walter L. Biering, President of the American Medical Association, but also Dr. James S. McLester, the President-elect of the American Medical Association. We are making a serious attempt to improve the scientific exhibits. Our meeting place adapts itself splendidly to this effort. This is the first year that the president-elect has been an integral part of



the Program Committee. The direction and development of the scientific exhibits has been placed in charge of our President-elect, Dr. Thomas A. Burcham. Our meeting place, the Masonic Temple in Davenport, lends itself to our needs in a most ideal way. Our commercial exhibitors will be most pleased with what we can offer them. The program will continue the sectional idea instituted last year with some modifications which we believe will be an improvement. Our meeting place is ideal for sectional meetings. The section on ophthalmology and otolaryngology will not divide into sections, for we believe they can be best served as a unit. There will be a section one afternoon on medical economics and the business of the practice of medicine. Believing that a little levity is good for all, we are promised an evening of relaxation which we feel will meet with an enthusiastic reception. To the annual banquet we hope to bring innovations which will win universal approval and a desire by everyone to attend.

The Committee on Military Affairs, through Dr. Thomas F. Suchomel, calls attention to the fact that "R. O. T. C. training for medical students passes into history in June, 1935, due to lack of funds. Also that efforts are being made to abolish compulsory military training at the University of Iowa." The committee feels that such movements, while the rest of the world is increasing its armaments, are at times prompted by enemies of our government, and that our organization should take a positive stand in opposition to the same. They desire that action be taken by the Trustees and Council, and propose to present resolutions to the next meeting of the House of Delegates for adoption.

Dr. R. H. McBride, Chairman of the Committee on Child Health and Protection, reports as follows: "Our committee had a meeting at Des Moines on October 15. At this meeting we received from the State Board of Health some sixty-six pieces of literature, which they wish to mail out to various groups, lay and medical. Each of our committee has copies of these sixty-six pieces of literature and we are now in the process of reviewing and criticising them. We have, also, written to the presidents of the medical societies in each county, asking that they appoint a committee in each county to which all matters pertaining to Child Health and Protection can be referred. We have had replies from many of these, but by no means all. These are the main functions which the committee has had under way at the present time. We are, of course, glad to furnish programs for the Speakers Bureau whenever county societies or lay groups request such programs."

The social trends of society and government are being stamped on the medical profession whether we will it or not. While in the past our activities were almost wholly scientific and educational, the changing order brings prominence to those activities of an economic nature. Therefore our Medical Economics Committee assumes a very important position in our Society. This committee has been at work studying our economic problems, brought so abruptly to the foreground by the monetary depression and the supplanting of local funds, and even economic responsibilities, by state and federal funds. This committee met in Des Moines, September 26, 1934. At that time preliminary arrangements were made for a later meeting with Mr. E. H. Mulock, State Director of Relief. Meeting later in the day with the Council, Mr. Mulock addressed the meeting and a general discussion occurred with regard to problems of medical relief that are confronting us. The problem concerning a recommendation to the House of Delegates as to the future status of state laboratory service was discussed at the meeting of the Committee and also at the Council meeting. The Council went on record as favoring the restriction of state laboratory service to a position where it may serve the indigent, but not be in unfair competition with private laboratories. In meeting with medical groups over the state, I have attempted to ascertain whether this action meets with the approval of our membership. It is surprising the differences of opinion in various localities. It is largely a question of whether the benefits of free laboratory service, scientific and monetary, outweigh the benefits to be derived from fostering and developing the private laboratories, and our duty to protect a small minority group in our membership in their efforts to be compensated sufficiently to enable them to confine their work to this limited field. It seems probable from the discussion during the meeting of the Committee on Medical Economics that it will only be possible to bring in a recommendation to the House of Delegates after the committee has had a joint conference with the committee of laboratory directors, the State Department of Public Health, and the State Laboratory.

The Medical Economics Committee held a second meeting on November 28, meeting with Mr. Mulock and Miss Tyler of the Iowa State Relief Commission. There are certain facts that the medical profession in Iowa should know. The fact that over thirty counties in Iowa have reached the limit of their legal indebtedness; that up to a very short time ago, there had been in Iowa no state or federal funds, to the knowledge of the

State Director of Relief, used for sick relief care (hospitalization, drugs, professional service, etc.). There are five basic relief needs for indigents, namely, shelter, fuel, food, clothing, and sick relief. Federal funds so far have not provided for hospitalization or medical care in hospitals. During 1933 the proportion of sick care relief in the counties of Iowa, to the total expenditures of the above five basic relief needs, varied from five per cent to 43 per cent. Such a variation demonstrates a condition to which no director of relief can be expected to subscribe.

While we as physicians should not be called upon to establish the indigency of any individual, we as a group have a responsibility that differentiates sick care relief from the other four basic needs. Those in charge of furnishing relief funds can determine and dictate what is required in the way of food, shelter, clothing, and fuel; but no relief agency can determine how much medical care an individual should have, what drugs he may need, or when hospitalization and for what period the same is necessary. We, as physicians, are the only ones who can decide these questions and when we decide them we must accept a responsibility to see that this service is delivered efficiently and not extravagantly. If we neglect this we are inviting socialized medicine. Such responsibilities must be accepted or our desire to direct sick care relief will be challenged and taken from us. When a director of relief asks why in one county the proportionate hospitalization costs are approximately nine times (according to the case load of indigency) what they are in a nearby county, we must be prepared to show justification for this difference.

The writer does not believe that sick care can be given efficiently and economically without some local responsibility. We feel that the physician should receive adequate compensation; but because this compensation is coming from government funds, there is no justification for rewarding indigency with the frills of scientific medicine. Those in government disbursing agencies look first at the total sick care cost. They then break this cost down into hospitalization, drugs, and professional services. If, in ratio to the cost of the five basic needs, the total in one locality goes greatly beyond that in another, they have a right to know why. This explanation is a local responsibility, because we are the judges, not the disbursing agent, as to when the individual needs sick care relief.

If there are localities where the ratio is too high, there are many localities where it is far too low, too low because the physicians are bearing the load without any compensation. The State Director

of Relief sought advice. The subject of a master contract was suggested, since there must be some uniformity in the disbursing of funds. Localities vary in needs of its people and desires of the physicians. A flat sum contract might be acceptable in one community, while another might desire a fee schedule. One community may desire to give their indigent the free choice of physician while another may require the acceptance of certain appointees.

The suggestion was made to the Director of Relief that an attempt be made to establish a fair and acceptable ratio of sick care cost; that hospitalization, drug cost and professional services as a total up to the accepted ratio, would be approved; that the responsibility of hospitalization and drug costs be accepted by the medical profession. This means that if hospitalization and drug costs become too great, professional services get less. This is local professional responsibility.

The suggestion was further made that our organization would work with the State Director of Relief in attempting to convert disproportionate costs if we could have the assistance of the State Relief office in obtaining for the physicians in other localities their proportionate ratio of sick care relief compensation.

These are some of the problems the Medical Economics Committee is attempting to solve while trying to render services to local groups. The committee further recommended the acceptance of the Iowa State Medical Society fee bill on a 50 per cent basis. It must be borne in mind, however, that unsupervised professional services have a possibility of bringing total costs far beyond what will be paid. There must be a willingness to assume local responsibility and keep costs within a certain range. If not, we are inviting socialized medicine or bureaucratic control of professional services from without the profession.

The committee has sponsored a medical economics program working with the Speakers Bureau which arranged for the essayists to appear on the program presenting the following subjects:

The Socialization of Medicine from the Viewpoint of the Sociologist—C. H. Graening, M.D., Waverly.

The Socialization of Medicine in Foreign Countries—E. M. Myers, M.D., Boone.

American Attempts at the Socialization of Medicine—M. B. Call, M.D., Greene.

The Socialization of Medicine from the Viewpoint of Organized Medicine—John H. Henkin, M.D., Sioux City.

This program was first given in Bremer County, September 20, and is available for other



counties if desired. This committee, composed of Drs. T. F. Thornton of Waterloo, James C. Hill of Newton, and James C. Donahue of Centerville, realizes what a large task confronts them and are taking their responsibilities most seriously and giving their best of time and effort to meet the several problems as they present themselves.

The Committee on Public Policy and Legislation, under the chairmanship of Dr. Fred Moore, consists of Drs. R. D. Bernard of Clarion, Peter A. Bendixen of Davenport, the Secretary and the President. This is no time to ask this committee for a report. Its activities have been brought to the attention of every county unit. A program of education has been attempted in every district. The effectiveness of the work of this committee demands support from our unit organizations and the influence of our members to be used individually in their own communities. This committee is advocating not medical legislation, but a public health measure known as the Basic Science Law. It is superfluous to comment on the activities of this committee and particularly of its chairman. Dr. Moore is giving of his time and effort far beyond what we have the right to expect. Whether our program is brought to a successful conclusion or not, his example of unselfish service to organized medicine deserves the highest commendation. If the lesson of local community responsibility has been sufficiently impressed and the responsibility for the same is accepted success should be assured.

The Council, with the chairman, Dr. Harold Spilman, presiding, met in joint session with the Board of Trustees on September 26, 1934. I requested the Committee on Medical Economics to attend this session since economic questions would no doubt be discussed. This did occur, and, as stated, Mr. Mulock, State Director of Relief, appeared before the assembled groups, and discussed relief problems as affecting compensation for medical services. Resolutions were adopted offering a protest to the Bureau of Transient Camps, Washington, D. C., against medical service in transient camps being directed entirely from a central bureau in Washington, thus taking away the responsibility or authority of state directors to negotiate with locally organized medical groups to render such service.

The Council has two committees, a Committee on Professional Relations and a Committee on Public Relations. The chairmen of these committees have been in more or less of a quandry as to just what positions their committees occupied, just what they should attempt to do, and how far they should go without conflicting with other committee activities.

As far as the Committee on Professional Relations is concerned the fog has been lifted, and there lies before it a very broad and definite program. At the call of Dr. Moore, a meeting was held in Des Moines on December 9. It was an inter-professional group meeting, with the directing officers of the state dental, nursing, veterinary, and druggist associations in attendance. Dr. E. J. Watson of Diagonal, Chairman of our Professional Relations Committee, was present, and for the time being has placed his committee under and subject to the direction of the Committee on Public Policy and Legislation. Not only will these two committees cooperate in arranging, before the end of 1934, local meetings of these allied professions, but they will ascertain if local groups approve of the permanent organization of these allied professions. It is to be hoped that the state associations of the several allied professions will also express their approval, and appoint delegates who may meet some time in the near future to perfect a state allied professional association. Our mutual problems are public health problems. At times they may more directly affect one group, but as long as they are public health problems, we are all interested. Such an organization can act as a liaison organization, offer the proper contacts for effective action of mutual benefit first to the public and second to all participating groups. The consummation of this idea is now a job for the Professional Relations Committee.

The Public Relations Committee, with Dr. Evon Walker of Ottumwa as chairman, is still groping in the dark. This is no reflection on the chairman or members of the committee who are anxious to do their job, if they knew just what it constituted. This is a problem that must be considered by the Council. In fact, effective organization can be hindered by too many committees, and it is unfair to place members on committees unless the committees have some specific duties to justify their existence.

Because the depression and socializing forces have focused attention on economic phases of the practice of medicine, we must not forget that our primary purpose as an organization is educational.

The Speakers Bureau has developed into one of our major activities. Dr. Daniel J. Glomset of Des Moines, as chairman of the committee, consisting of Drs. Felix A. Hennessy of Calmar, L. C. Kern of Waverly, H. L. Brereton of Emmetsburg, and Sydner Maiden of Council Bluffs, has to shoulder the major burdens of the committee's work. The very nature of the demands made upon this committee demands active personal supervision. In its broad aspect it is the most important educational activity that we have. It has possibilities

for the future far beyond our present accomplishments. To those directing the work there is the satisfaction of rendering a service to organized medicine. I do not believe our membership is aware of the efforts necessary to keep this department operating; the disappointments to those in charge when performances do not measure up to expectations; and the immediate and perplexing problems that arise unexpectedly, and where decisions must be made instantly. This department is one where unbounded enthusiasm and untiring energy are required, and it behooves our organization to develop men who have an interest in this particular field of activity, so that the work does not become dependent on any one individual. Then when the one directing this activity desires to relinquish the work, we will have definite assurance that the work can continue without any marked interruptions.

This committee deserves unlimited praise from our membership, and, if there have been disappointments at times, it should be remembered that no one so keenly regrets their occurrence as Dr. Glomset and the members of his committee.

Dr. Glomset submits the following short report with comments. "Since the time of our last annual meeting the energy of the Speakers Bureau has been expended in two main activities: first, postgraduate education, and second, a plan of exchange programs between county societies. This fall the Bureau arranged for the University postgraduate courses to be given in six communities in central and eastern Iowa, and helped with the arrangements for a special course in the north-eastern part of the state. Those in charge of the local arrangements where the courses are being held have cooperated so splendidly that we have had one of our largest enrollments in postgraduate work this fall—300 members. National recognition has come to the State Medical Society and its work in the field of postgraduate medical education. It is the aim of the Bureau to keep working on this phase of its activities—constantly striving to perfect the quality of the work offered and establish fees at a level at which the doctors in Iowa can take advantage of the opportunity for postgraduate work as often as it is offered in their locality.

"The other activity which the Speakers Bureau has been promoting in the past few months is the plan of an exchange of programs between county medical societies. Thus far exchange programs have been arranged for thirteen counties, with fourteen planned to take place in the near future. These meetings might well be termed scientific fellowship meetings, as they not only disseminate scientific facts but promote good fellowship be-

tween the members of the various county societies. In this way the Bureau is attempting to carry on its education program and at the same time unite the members of the State Society in that solid front which is so necessary if we are to face our problems of today and the future, and emerge victorious.

"Two committee meetings have been held and in the interim each member of the committee has been extremely active in carrying on the work of the Bureau. The two new members of the committee, Drs. Brereton and Maiden, are getting behind the Speakers Bureau program with great zest and enthusiasm, and the other two veteran members, Drs. Kern and Hennessy, are handling their share of the work with their usual care and dispatch."

The Library Committee works largely in an advisory capacity with Dr. Jeannette Dean-Throckmorton, who is the librarian for the medical department of the Iowa State Library. Dr. Harken, the chairman of this committee, has submitted his report through a communication received from Dr. Throckmorton. To those who have not availed themselves of the services of the State Library as administered by Dr. Throckmorton, I personally would urge them to do so. The personal interest manifested, the completeness of service rendered, and the rapid dispatch with which material is sent to those requesting the same, bestows on those responsible the highest praise and commendation.

It is to be remembered that not only physicians but those of the allied profession avail themselves of this service, which is given to the recipients for just the postage cost. This medical library should have the united support of our entire organization. If the exigencies of the present depression did justify curtailing its activities by reducing the state appropriation by \$700.00, certainly the time has arrived when there should be a restoration of funds, so that the medical literature in the library will be complete. There must be funds provided to purchase not only this literature, but also funds to provide for the proper binding of valuable material. To this we should lend our active support.

This year I had the temerity to address our association on some of the future needs of physicians as I saw them. Our own efforts in postgraduate instruction have received wonderful support from the members of the faculty of the University Medical School. I expressed the opinion that postgraduate instruction has been neglected as far as medical educators are concerned. There has been intense concentration on the undergraduate, to the neglect of the physician in the field. In the



new medical program of Soviet Russia, postgraduate instruction, at intervals, is required, if a physician wishes to continue in the practice of medicine.

It has seemed to me that state institutions teaching medicine are in a particularly advantageous position to develop clinical postgraduate instruction. This demands first the fostering and developing of a spirit of enthusiastic cooperation between the state teaching institutions and the state medical societies; second, the development of a desire on the part of physicians for such postgraduate instruction; third, the desire on the part of state institutions to undertake such work; and fourth, the education of the public and our law makers to feel that such a program would be one of public benefit for which sufficient funds should be provided.

Since this was initiated individually, the committee that might have taken over part of this work has instructed me to continue until it was possible to formulate more definite plans. The offer has been made on the part of the medical profession; we are awaiting the opportunity to discuss its possibilities with our medical educators.

Such, in brief, is an informal interim report to our members of the stewardship that you have intrusted to some of us for 1934 and 1935.

## CONJUNCTIVITIS IN THE NEWBORN\*

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Inflammations of the conjunctiva in the early days of life should be regarded and managed as being of gonococcal origin until proved otherwise. The gonococcus is the most important organism which causes conjunctivitis in the newborn; before prophylactic treatment was practiced it was responsible for about two-thirds of the cases and its effects were the most destructive.

Infection of the conjunctiva in the newborn is facilitated because there is no lacrimal secretion, the epithelium is thin and younger cells are not protected by a superficial layer of older flattened cells, and there is no subepithelial lymphoid tissue as is present in the adult. Infection is divided into three periods:

1. Before birth; babies have been born with the disease developed, even when delivery was accomplished by Cesarean section.

2. At birth; inoculation is favored where the upper lid overlaps the lower, by faulty application

of obstetric forceps, by examining fingers and in the presence of a tight perineum.

3. After birth; by unskilled or careless attention to bathing and dressing the infant, or by other factors of exposure.

The incubation period for gonorrheal conjunctivitis is from two to five days. The onset is acute and usually severe. All of the conjunctiva is invaded but more particularly the bulbar. Papillary hypertrophy persists for some time. The clinical duration is from two to six weeks or more and the laboratory duration is from two to three weeks.

The diagnosis is based on the presence in smears of gram-negative diplococci (coffee-bean shaped) which grow in a turf-like formation on epithelial cells. These cells are not attacked by any other gram-negative coccus or by saprophytes. The true epithelial parasites of the conjunctiva are the gonococcus, the pneumococcus, the Koch-Weeks bacillus, the diphtheria bacillus, and the influenza bacillus. All other organisms which cause conjunctivitis do so, not by invading the epithelium, but by growing in the secretions or on dead cells, and they produce inflammation by diffusion of their toxins.

The principal complication arises from damage to the cornea which leads to impairment or loss of vision and to shrinkage or loss of the globe. The cornea is affected in about 27 per cent of all cases. Occasionally mixed infection with inclusion blennorrhea is present. The prognosis is bad. Treatment is by the local use of silver nitrate and the parenteral administration of foreign proteins.

*Inclusion blennorrhea:* The incubation period is from five to eight days. The onset is generally acute but may be subacute. All parts of the conjunctiva may be affected. The characteristic manifestation consists of a papillary conjunctivitis, particularly of the lower fornix; the upper one is relatively clear. The clinical duration of the disease is from three to six weeks, while the laboratory duration is from three to twelve months. There are no complications of moment unless a secondary infection by the gonococcus occurs. The prognosis is good in uncomplicated cases. Treatment is directed to any secondary infection.

*Pneumococcus:* This is probably due to spray infection, as from unguarded coughing or sneezing by an infected person in the presence of the patient. The incubation period is thirty-six hours. The onset may be acute or subacute, and occurs in from six to twelve days after birth. All parts of the conjunctiva may be affected. There is a diffuse papillary hypertrophy. The clinical duration is from three to seven days and the laboratory duration from one to two days where treatment is prompt and effective. There are no complications

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unless the cornea becomes abraded. The prognosis is good where the disease is limited to the conjunctiva. Treatment is by ethylhydrocuprein sulphate (optochin), or silver nitrate.

*Influenza bacillus:* This is usually due to spray infection. The incubation period is thirty-six hours. The onset may be subacute or chronic, and occurs in from six to twelve days after birth. All of the conjunctiva is affected, but the bulbar predominately. The clinical duration is from two to three days and the laboratory duration is one or two days. There are no complications and the prognosis is good. Treatment is by silver nitrate. This organism must be differentiated from the Koch-Weeks bacillus.

*Koch-Weeks bacillus:* This condition is rarely seen in this part of the United States, but it is common in the eastern part. The incubation period is from thirty-six to forty-eight hours. The onset is acute and severe. The bulbar conjunctiva is affected. The clinical duration is from three to seven days and the laboratory duration is two or three days. This organism is readily differentiated from the influenza bacillus in smears; but confusion arises in cultures. There are no complications and the prognosis is good. Treatment is by silver nitrate.

*Staphylococcus pyogenes aureus (hemolytic):* The incubation period is forty-eight hours. The onset is subacute or chronic and occurs in from six to twelve days after birth. The palpebral conjunctiva is diffusely affected. The clinical duration is from two to four days and the laboratory duration is one or two days. There are no complications and the prognosis is good. Treatment

is by mercurochrome, one per cent, or silver nitrate, one-half per cent.

*Streptococcus hemolyticus:* The incubation period is uncertain, but is approximately forty-eight hours. The onset is subacute. All of the conjunctiva may be affected. The organism does not attack the epithelium but the subepithelial tissue. The formation of a false membrane is characteristic. The clinical and laboratory durations are extended; they may persist for several years. The principal complication is severe damage to or loss of the globe. The prognosis is bad. Treatment is disappointing, but scarlet fever antitoxin seems to offer more hope than any other agent thus far studied.

*Diphtheria bacillus:* The incubation period in diphtheritic conjunctivitis is uncertain. The onset is acute or subacute. All of the conjunctiva may be invaded and a true membrane is formed in many cases. The clinical duration, when promptly and effectively treated, is from four to ten days, while the laboratory duration is from two to five days. The principal complication is damage to the cornea from the toxin produced by the organism. It is rather characteristic that the primary organism is succeeded in a few days by any of a considerable number of secondary organisms, among which some form of the streptococcus group is more prevalent than others. The prognosis is good in uncomplicated cases. Treatment is by diphtheria antitoxin locally and systemically.

*Morax-Axenfeld bacillus:* This is rare in the newborn. The incubation period is forty-eight hours. The onset is subacute or chronic. The palpebral conjunctiva, particularly the marginal

#### CONJUNCTIVITIS IN THE NEWBORN†

Infecting organisms	Incubation period	Onset, manner of	Parts affected	Clinical duration	Laboratory duration
Gonococcus.....	2-5 days	acute and severe	all bulbar	2-6 weeks	2-3 weeks
Inclusion Blennorrhea.....	5-8 days	acute to subacute	all fornices	3-6 weeks	3-12 months
Pneumococcus*.....	36 hours	acute to subacute	all	3-7 days	1-2 days
Influenza bacillus*.....	36 hours	subacute to chronic	all bulbar	2-3 days	1-2 days
Koch-Weeks bacillus.....	36-48 hrs.	acute and severe	bulbar	3-7 days	2-3 days
Staphylococcus pyogenes aureus (H)*.....	48 hours	subacute to chronic	palpebral	2-4 days	1-2 days
Streptococcus hemolyticus.....	48 hours(?)	subacute	all	extended	extended
Diphtheria bacillus.....	uncertain	acute to subacute	all	4-10 days	2-4 days
Morax-Axenfeld bacillus.....	48 hours	subacute to chronic	palpebral marginal	extended	variable
Colon bacillus.....	2-3 days	subacute	all	2-3 days	2-3 days

\*Onset occurs in from six to twelve days after birth.

†Table from Collins and Mayon. Pathology and Bacteriology of the Eye. P. Blakiston's Son and Company, Philadelphia, 1925.



areas, is affected. The clinical duration is extended and the laboratory duration is variable. There are no complications and the prognosis is good. Treatment is by the application of ointment (not solution) of zinc sulphate to the conjunctival sac and to the margin of the lids for a period of at least six weeks.

*Colon bacillus:* This is rare in the newborn. The incubation period is two or three days. The onset is subacute. All of the conjunctiva may be affected diffusely. The clinical and laboratory durations are variable, but usually persist for two or three days. There are no complications and the prognosis is good. Treatment is by any anti-septic.

*Lacrimal conjunctivitis:* This is secondary to infections of the lacrimal sac. The prevalent organisms are the streptococcus, pneumococcus and influenza bacillus; they are found on the surface of the conjunctiva and therefore there is no pseudomembrane formation. Treatment is directed to the lacrimal sac.

Since January 1, 1933, 65 cases of conjunctivitis in the newborn have been treated in the University Hospital consisting of: Twelve, inclusion blennorrhea; eleven, pneumococcus; three, influenza bacillus; thirty-two, staphylococcus aureus; four, pneumococcus and staphylococcus aureus; two, lacrimal conjunctivitis, one secondary to a pneumococcus, the other to a pneumococcus and influenza bacillus; and one, gonorrheal conjunctivitis in a premature infant admitted from outside practice.

I am indebted to Dr. Phillips Thygeson of the Department of Ophthalmology for bacteriologic and other data submitted in this presentation.

## ERYTHROBLASTIC ANEMIA

DENNIS H. KELLY, M.D., and  
LEE FORREST HILL, M.D.,  
Des Moines

The classification of the anemias of childhood has long been a perplexing problem. In 1889 von Jaksch described a syndrome of childhood characterized by anemia, by splenomegaly, by moderate hepatic enlargement, by leukocytosis and by a marked tendency to recover. Time has demonstrated that this has not constituted a separate clinical entity, but a heterogeneous group of anemias ascribed to various causes. In 1925 Cooley<sup>1</sup> described a series of cases which he first classified as von Jaksch's disease. The picture Cooley described, however, possessed specific clinical and pathologic characteristics which definitely separated it from the miscellaneous group of von Jaksch's disease. To this clinical entity he gave

the name of erythroblastic anemia<sup>3</sup> and made another contribution to the clarifying of the anemias of childhood. Antedating Cooley's article were several contributions to the literature on von Jaksch's disease, the cases clinically resembling erythroblastic anemia. Since 1925 there have been numerous case reports. In March, 1932, Baty, Blackfan and Diamond<sup>4</sup> in an excellent paper cited twenty-six cases in the literature and reported twenty cases, of their own. Since that time there have been sixteen case reports<sup>5, 6, 7, 8 and 9</sup> on erythroblastic anemia, making a total of sixty-two.

### DEFINITION

Baty, et al., define erythroblastic anemia as "a disturbance of the hematopoietic system characterized by a constant racial and familial incidence, a typical facial appearance, a progressing anemia with large numbers of nucleated erythrocytes in the peripheral blood, enlargement of the spleen, distinctive changes in the bones, and finally, histologic lesions in the bone marrow and spleen."

### ETIOLOGY

Erythroblastic anemia is a disease of childhood, having its onset usually in the first two years. The sex distribution is about equal. The disease is distinctly racial in that it is limited to people of the Mediterranean countries. Most of the patients have been of Greek parentage; some of Italian descent, and cases in Sicilians and in Syrians are reported. It has been suggested that the disease be called Thessalanemia or Thalassemia because of the peculiar racial tendency. The occurrence in races other than Greek may perhaps be attributed to intermarriage at the time of Alexander the Great. The familial incidence is interesting. In the Boston group of cases, two of the patients were twin sisters, two were brothers, two were sisters, and three were brother, sister and first cousin.

### PATHOGENESIS

The pathogenesis of erythroblastic anemia has given rise to considerable discussion. Cooley originally attributed the condition to a hemolytic process, and placed it in the same category with congenital hemolytic anemia. He later concurred with Baty in denying that it was primarily a hemolytic process.<sup>10 and 11</sup> Whether the disease is fundamentally a racial or inherited defect in erythrocytic hemopoiesis, or whether there is an inherent metabolic defect with secondary hyperplasia of bone marrow is an open question. Whipple and Bradford<sup>6</sup> suggest the possibility of a fundamental disturbance of pigment metabolism as a field for investigation in this disease. Special staining methods demonstrate pigment deposits resembling he-

machromatosis. Erythroblastic anemia is in many respects analogous to pernicious anemia in the stage of relapse. In both there is a hyperplasia of bone marrow and an outpouring of immature red cells. Sick cell anemia seems to be a similar process. There is an inherent defect in the erythrocytes, the disease is racial, and the anemia and changes in the bone are comparable to the condition described by Cooley. The contrast with leukemia is interesting. In leukemia there is a malignant overgrowth of myeloid elements, and infiltration of viscera; the erythrogenic elements of the bone marrow are encroached upon, and anemia results. On the other hand, in erythroblastic anemia the hyperplasia is confined to the erythrogenic factors and limited for the most part to the bone marrow and spleen.

#### SYMPTOMS

The onset of symptoms is so gradual in erythroblastic anemia that a precise history is difficult to obtain. Pallor is the first noticeable symptom and because of the dark pigmentation of the Mediterranean races the skin assumes a peculiar dusky color. At the onset the pallor is not sufficient to alarm the parent, but as the patient becomes more pale and other symptoms develop it is acknowledged that the patient has had a peculiar color for a long time. Enlargement of the abdomen is usually the next manifestation and this is progressive. Weakness and shortness of breath occur as the pallor and abdominal protuberance increase. Unlikely many of the anemias of childhood hemorrhages are uncommon.

#### PHYSICAL FINDINGS

Inasmuch as the disease progresses so slowly most of the patients are not seen until the physical findings are well marked. The state of nutrition is usually good, although physical development is somewhat retarded. The appearance is striking; the patient is short, the abdomen is prominent, the skin has a dusky pallor, the facies is mongoloid, the eyes are slanting, an epicanthal fold is frequently present, the nose is short with a depressed bridge, malar eminences are high and prominent, the head is large, and frontal and parietal bosses are present. In extreme cases there is a depression of the skull along the superior sagittal suture. By the time the patient seeks consultation the heart is enlarged and hemic murmurs are present. The abdomen is protuberant. The spleen is invariably enlarged and tends to increase in size as the disease progresses. It is smooth, firm, has a sharp border and the splenic notch can usually be palpated. The liver is moderately enlarged, is smooth and soft and not tender. The skin does not have the waxy appearance of a pa-

tient with aplastic anemia, or the lemon yellow color found in pernicious anemia. The lips and buccal mucous membrane are pale, and the skin has a peculiar muddy pallor.

#### ROENTGEN FINDINGS

Roentgen examination of the skeleton reveals characteristic changes as pointed out by Vogt and Diamond.<sup>12</sup>

1. The long bones show an increase in the total width; the cortex is thinned; the medulla is widened; and trabeculae are prominent.

2. There are increased porosity and irregular trabeculation of the flat bones.

3. The bones of the cranial vault show progressive changes as the disease continues.

In the early stages there is slight thickening, the tables are thinned, and there is increased porosity. In the advanced stages, the calvarium is greatly thickened, and the outer table becomes so thin that it can scarcely be defined. The diploe is thickened and appears to extend beyond the outer table. In profile the skull shows fine radiating trabeculae giving the appearance of "hair standing on end." Similar findings although much less marked are found in congenital hemolytic anemia and in sickle cell anemia.<sup>7 and 13</sup>

#### LABORATORY FINDINGS

The blood shows an anemia of varying intensity. The percentage of hemoglobin usually varies from 30 to 40. The erythrocytes commonly number 2,000,000 to 3,000,000. The blood plate-

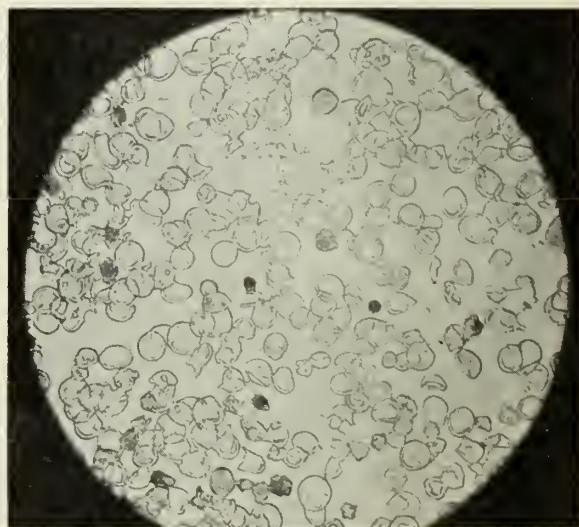


Fig. 1. Blood smear showing numerous nucleated red cells.

lets do not vary from normal quality or quantity. There is usually a moderate leukocytosis. The differential count of leukocytes appears to vary, for at one time polymorphonuclear leukocytes pre-



dominate, and at other times lymphocytes constitute the majority. A few myelocytes are present in the blood smear. Normoblasts are invariably present numbering from several hundred to many thousand. The abnormality of the red cells in erythroblastic anemia is unusual. They seem to run the entire gamut of abnormal erythrocytes. Poikilocytosis, anisocytosis, polychromatophilia, and basophilic stippling are all present. The predominating cell is a macrocyte with uneven distribution of hemoglobin. Cooley has demonstrated by special staining methods that the macrocytes possess an abnormal stroma resembling in this respect the abnormal cells found in sickle cell anemia. Many microcytes are present. A few megaloblasts are usually found. Reticulocytes vary from five to fifteen per cent of the erythrocytes. Following splenectomy there is a rapid increase in the number of nucleated red cells so that they constitute from 50 to 90 per cent of the total nucleated cells. The results of the fragility test show a normal or somewhat increased span of resistance to hemolysis. The icteric index is normal, or only slightly increased. The urine and stools may at intervals contain an increased content of urobilinogen indicating abnormal hemolysis.

#### PATHOLOGY

The essential pathologic processes occur in the bone marrow and spleen. Other organs show the changes resulting from prolonged anemia. The examination of the bones reveals the changes demonstrated by roentgenograms, the cortex is extremely thin, the medulla is widened, and fine trabeculae are present. The medulla is filled with dense beefy red marrow. Microscopically the marrow is very hyperplastic with a marked overgrowth of erythrogenic cells, resembling the condition present in pernicious anemia in the relapsing stage. The spleen is much larger than normal; it is firm and dark red. The capsule is usually thickened. The malpighian corpuscles are prominent. Microscopically there is considerable fibrosis. The characteristic pathologic feature is the presence of islands of large undifferentiated cells surrounded by nucleated erythrocytes, indicating active erythrogenic hematopoiesis. There is also some evidence of myelocytic development. Eosinophils and eosinophilic myelocytes are invariably present. The liver and lymph glands may show moderate evidence of erythropoiesis.

#### COURSE OF THE DISEASE

Erythroblastic anemia is a chronic disease, which begins in infancy and may continue through childhood. The disease is slowly progressive and not characterized by remissions.

Death usually results from intercurrent infection. The patient reported by Heizrot was living and reasonably well ten years after the onset of the disease. The shortest duration of a case was in an infant who died at seventeen months of age.

#### TREATMENT

There is no specific treatment for erythroblastic anemia. The addition of iron and liver to the diet may produce a temporary improvement. Liver extract is of no particular value. Splenectomy does not cure the condition, but it relieves the patient of the burden of the enlarged spleen. Cooley was of the opinion that in two of his cases the progress of the disease was arrested by removal of the spleen. Roentgen therapy has not proved effective. Transfusion of blood results in temporary relief, but is of no lasting benefit.

#### CASE REPORT

We wish to report the case of a Greek boy who came under observation in May, 1930, at the age of thirty-seven months. For the previous eighteen months the child had been pale, and the abdomen appeared unduly prominent. For the last three or four months epistaxis of a mild degree had occurred on several occasions. He fatigued easily and lately became short of breath on the slightest exertion. At the time of admission he could scarcely walk across the room. The parents were normal healthy individuals and there was no history of familial disease. Two sisters, one and five years of age, were perfectly well. The birth was normal, full term, and the birth weight was eight and three-fourths pounds. The infant was breast-fed for nine months. Cod liver oil and orange juice had been administered irregularly since infancy. The physical and mental development had been normal. In February, 1930, he had measles, and on several occasions had mild head infections.

*Physical examination* at the time of admission revealed a very well nourished Greek boy with a peculiar dusky pallor. The weight was 33½ pounds, and the height was 38 inches. The head measured 21 inches, the chest 23 inches and the abdomen 23 inches. The features were mongoloid. The head was large and definite frontal bosses were present. The eyes were slanting. Bilateral epicanthis was present. The conjunctiva was pale and the sclera had an icteric tinge. The lips and buccal mucous membrane were pale. The tonsils were very large, cryptic and pale. Small discrete anterior cervical, axillary and inguinal glands were palpable. The ribs flared and the sternum was prominent. The lungs were clear. The heart was enlarged to the left, the apex was

one inch outside the mamillary line. Soft systolic murmurs were heard at the apex and base. The blood pressure was 90 systolic and 66 diastolic. The abdomen was protuberant. The spleen was greatly enlarged, the lower border extended four fingers' breadth below the costal margin; it was smooth, hard and the notch was easily palpable. The liver extended three fingers' breadth below the costal margin but, in contrast to the spleen, seemed soft. The extremities were normal except for knocked knee. The skin was smooth, moist and possessed a peculiarly muddy pallor.

*Roentgen examination* of the skull and long bones were made by Dr. Thomas A. Burcham. At the time of admission the x-ray of the skull was negative. The lower three inches of the radius, bilateral, revealed a thinning of the cortex with an increase in the diameter. The metacarpals were increased in diameter with a thinning of the cortex. Roentgen examination in March, 1933, revealed considerable progress since the examination in 1930. Dr. Burcham reported, "There is a general decrease in the density of the bone structure. The cortex is thin, the diameter of the bone increased, the trabeculae are accentuated. The changes are particularly noticeable in the shaft of the long bones and the metacarpals. Slightly similar changes are noted in the flat bones of the skull, ribs, clavicle, scapula and pelvis."

*Laboratory examination* of the blood on May 27, 1930, showed red cells, 2,530,000; white cells, 11,400; and hemoglobin, 65 per cent. The differential count resulted in polymorphonuclears, 51 per cent; lymphocytes, 49 per cent; and nucleated red cells, four per cent. There was a marked variation in the shape and size of the red cells. The cells were pale and considerable polychromatophilia was present. The blood platelets numbered 184,000. The coagulation time was nine minutes; the bleeding time was three minutes. Repeated tests of fragility were taken. In May, 1930, hemolysis began at .38 per cent, and was complete at .32 per cent. In May, 1932, initial hemolysis began at .44 per cent and was complete at .28 per cent. Reticulocyte counts were taken at intervals and varied from 0.5 per cent to five per cent. The Wassermann and Kahn reactions were negative. The Mantoux test with 0.2 mg. O. T. was negative. Repeated urinalyses during the period of observation were essentially negative. A trace of urobilin was occasionally demonstrable. Examination of the stools showed nothing abnormal.

*Course:* The patient was given blood transfusions on June 20 and June 25, 1930, and a splenectomy was performed by Dr. Oliver J. Fay on

June 30. Following the splenectomy a shower of nucleated red cells occurred and normoblasts in enormous numbers persisted until his death. The patient's clinical condition was considerably improved following splenectomy. He resumed his usual activities, attended school regularly, and afforded his family a great deal of pleasure. The anemia and unusual blood picture persisted, however, and the liver remained enlarged. He survived an attack of pertussis and two severe respiratory infections. On three different occasions the patient was seen in mild shock accompanied by severe abdominal pain and relieved by morphine. The next day the skin and sclera were icteric, the liver was tender, and the urine was deeply colored by bile. In March, 1933, he developed a streptococcic otitis media and mastoiditis, then lateral sinus thrombosis with septicemia. Death occurred April 6, 1933, from a streptococcic meningitis, more than four years after the onset of clinical symptoms of anemia. Examination of the extirpated spleen was made by Dr. Julius Weingart, whose report was as follows:

"The specimen consists of a spleen weighing 165 grams. The surface is smooth. On cross section it shows a rather glossy appearance and is of normal consistency. The malpighian corpuscles are very distinct. Microscopic examination reveals the sinuses of the spleen filled with blood and the endothelium is swollen. Numerous groups of quite enlarged polygonal cells are found which resemble the cells found in Gaucher's splenomegaly. Numbers of myelocytes and lymphocytes are seen but the most distinctive cell present is one with a deeply staining pyknotic nucleus and a deeply staining cytoplasm. These latter are possibly erythroblasts. There is no marked increase in connective tissue."

#### AUTOPSY REPORT

The autopsy report made by Dr. Julius Weingart on April 6, 1933, was as follows:

"The body is that of a male child, apparently nine years of age. The skin has an icteric tint and is very pale. There is an operative drainage wound over the right mastoid; also a recent wound on the right side of the neck closed by skin clips (site of jugular ligature). There is also an old scar in the left upper quadrant of the abdomen (site of splenectomy). The calvarium is variable in thickness, one or two millimeters over the temporal region, but as much as eight millimeters in the frontal and occipital regions. The striking change is that the thickening is due to an increase in the cancellous bone and this is intensely red in color. The dura is much thickened. The



subarachnoid spaces are filled with turbid fluid and thick purulent exudate of yellowish green color. The cerebral blood vessels are much engorged. Purulent exudate in a great amount is found about the base of the brain. The ventricles are filled with turbid spinal fluid. In the right sigmoid sinus, and entirely occluding it, is found a

of normal size, show faint fetal lobulations and on section have a glossy appearance. The parenchyma is rather pale. The lower end of the right femur was then examined. There was only a thin cortex not more than one millimeter in thickness. The remainder of the end of the femur was made up of cancellous bone, filled with red marrow. The bone marrow in the shaft was deep red in color. The differential count on bone marrow follows:

Myelocytes	
Neutrophilic .....	22
Acidophilic .....	2
Basophilic .....	3
Myeloblasts .....	3
Lymphocytes .....	43
Degenerated forms and naked nuclei	
polynuclears .....	30
Normoblasts .....	12
Undetermined .....	10
Megaloblast .....	1
	<hr/>
	126

“Microscopic examination: The bone marrow is hyperplastic. A moderate number of myelocytes and mature polynuclears are seen. There is no



Fig. 2. The calvarium showing thickening of frontal bones and thinning of temporal bones. Note thinning of tables and increase in cancellous bone.

thrombus of grayish color. It is adherent to the vessel wall. The left sinus is clear.

“Thorax: The thymus is small. The lungs show some congestion at their bases and a few petechiae on the pleural surfaces. No other changes of note. The heart is of normal size. The pericardial sac contains a normal amount of clear fluid. There are several small hemorrhages at the base of the right ventricle on the anterior aspect of the heart. The right chambers are engorged and filled with red clots. All the cardiac valves are normal. The ribs have a bluish color. On section the cortex is thin and the marrow is hypertrophic.

“Abdomen: The peritoneum is smooth and shining. There are many thin adhesions in the left upper quadrant. The spleen is absent. The liver is of a deep mahogany color. It is of normal size. On section it shows normal markings. The gall-bladder has a thin wall and is of the normal bluish color. The stomach and intestines show nothing of special note. The pancreas is approximately normal. It is apparently slightly larger than normal. The tissue is firm and has a waxy appearance. The adrenal glands are normal. Both kidneys are

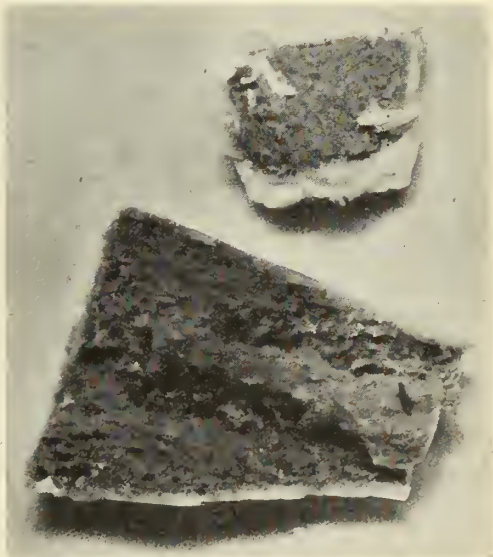


Fig. 3. Cross sections of lumbar vertebra and of femur. Note thinning of cortex and trabeculation of medulla.

special increase in these elements. There are many nucleated red cells, some as cells with considerable cytoplasm, and other smaller cells with very little cytoplasm. Many large cells with large nuclei are present in great numbers. The nuclei show a loose chromatin network. These cells form the most striking abnormal element of the marrow. Their

identification appears to us a matter of speculation. They are probably a primitive type of blood cell. The liver shows many dilated sinusoids, whose endothelium is much swollen. There is a heavy deposit of hemosiderin in the parenchymal cells. The kidneys show no changes of importance. The lungs show moderate congestion."

#### SUMMARY

The literature on erythroblastic anemia is reviewed, and the characteristic clinical and pathologic features are outlined. A case of erythroblastic anemia is presented, and autopsy findings recorded.

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### PULMONARY ATELECTASIS IN THE NEWBORN\*

ROY I. THEISEN, M.D., Dubuque

When Dr. Plass asked me to discuss the subject of pulmonary atelectasis in the newborn, I soon realized that in his clever way he had a definite purpose in wanting this subject reviewed at this meeting. He undoubtedly knew that most of us have signed many a death certificate, giving atelectasis as the primary cause of death, without having the least bit of remorse of conscience. If I have judged him correctly, and I think I have, his sole purpose in asking for this review, was to stimulate us to seek a little deeper, and a little more scientifically into the cause of death of the infants under our care, and not be satisfied with a high sounding word like atelectasis to cover up very gracefully some definite underlying pathology.

Information on atelectasis of the newborn is exceptionally meager in our textbooks, and on looking over some of these older works, I find that the authors have been content to agree with each other, and carry on with the traditional theories, which lacked scientific proof. Recently Farber and Wilson from Boston have reviewed the literature and present some excellent scientific studies on this particular subject, and if you are interested I am sure it would be worth your while to read their articles in the September, 1933, issue of the *American Journal of Diseases of Children*.

The term atelectasis means incomplete lung expansion and in dealing with the newborn we must realize that the term refers to that particular state of expansion of the alveolus which is the terminal unit of the respiratory structure of the lung.

The first breath of the newborn infant as you recall, is always quite a strenuous effort. Something very definite happens in the pulmonary system. For years it has been the belief, that the lungs become fully expanded with the first breath. The simplicity of this reasoning made it a rather attractive theory, but at the present time we can no longer accept it. We now believe that in the normal full term baby, expansion of the lung is a gradual process and that it takes from two to four days to gain complete expansion and that a period up to six weeks or longer may be required to inflate fully the lungs of a premature infant. In postmortem examinations of the lungs, it is found that the inflation takes place first of all in the anterior portions of the lung, the expansion gradually extends posteriorly, until eventually the entire lung space has been distended. This, therefore, is a point of paramount importance, and one to be remembered that during the first few days of life of the infant there is a normal or physiologic amount of atelectasis—because the expansion of the lung is a gradual process and not an immediate phenomenon. Therefore on conducting a postmortem examination of an infant who has died during the first few days, and finding areas of atelectasis, surely we cannot accept that finding as the primary cause of death. There is a reason for the atelectasis, and seldom can atelectasis in itself be truthfully called the cause of death in the full term infant. Some interference with the respiratory mechanism causes the atelectasis to persist to what we consider an abnormal degree.

On examination of the lung tissue of an infant who has never breathed, we find the lungs in a collapsed state, lying in the floor of the pleural cavity, possessing a deep purplish red color. The lobules of the lung cannot be identified through the pleura, and there is no sign of crepitus present. The whole lung will sink when placed in

\*Presented before the Eighty-third Annual Session, Iowa State Medical Society, Des Moines, May 9, 10, 11, 1934.



water. In those youngsters who have breathed for a few hours the anterior surfaces of the lung are pale pinkish blue and the lobulations stand out distinctly. Another point which must be kept in mind is that the gross examination of the lung is inadequate to determine definitely the amount of expansion. The pathologist frequently finds on microscopic section in an apparently fully expanded lung, large amounts of non-inflated pulmonary tissue represented by scattered nests of unexpanded alveoli.

The lung of the premature infant differs from that of a full term child. It is immature and is not prepared to take on or assume respiratory functions, and the more premature the youngster, the less developed is this function. In the lungs of these prematures are found masses of cells which are not capable of expansion regardless of the amount of pressure used in attempts to inflate them. Between the air containing spaces are very thick cellular alveolar walls, and on close examination they are not alveolar spaces, but dilated respiratory bronchioles and alveolar ducts. While the lungs of the premature infant may closely resemble the lungs of a full term baby, it is the microscopic picture that tells the story. The alveoli, which are completely developed but have not been expanded, have small lumens surrounded by high cuboidal cells which possess large round vesicular nuclei. The masses of alveolar cells which are not sufficiently developed for expansion are recognized by the massing of cells identical in morphology but without evidence of a definite lumen or true alveolus formation. With this thought in mind, a number of these premature babies just cannot continue to live because they lack sufficient respiratory epithelium to carry on the vital function. The point I want to get over is that we must realize that the premature infant may not have the necessary amount of lung tissue, and in that way it differs markedly from the full term infant.

In the full term infant we feel that the lungs are anatomically perfectly developed, and that it is not logical to accept the existence of atelectasis as a satisfactory explanation of death; it must be secondary to other causes. These factors are the ones which interfere with the initial expansion of these infants.

A frequent cause of atelectasis is an injured or an imperfectly developed respiratory center. Irregularity of breathing and intermittent cyanotic attacks point to cerebral injury. Especially in the premature baby, cerebral injury is common, and then, too, the center may not have reached the stage where it is able to respond to the proper stimulus.

Another etiologic factor which we should consider, is that there is a condition which exists in the respiratory tree of stickiness or cohesion. The surfaces adhere together, and considerable effort must be expended in causing the separation, to allow the air to penetrate into the bronchi and alveoli of the lung. If this cohesion cannot be overcome naturally, atelectasis will persist to a pathologic extent.

In the premature baby one sometimes sees an imperfectly developed thorax, which may not have the power to continue the respiratory function, and accordingly contributes to a persisting atelectasis.

During labor and especially during the second stage, it is possible for the infant to aspirate mucus, blood, liquor, or vernix and cause an obstruction in the respiratory tree. No doubt this factor alone is responsible for many deaths, and should be thought of. Obstruction seems to be more common in the full term infants than in the premature babies as there is less vernix up until the late months, and from the study made by Farber and Wilson this finding has frequently been confirmed.

In conclusion let me repeat that atelectasis in the newborn is seldom the primary cause of death, and that we should carefully investigate these infants who die, to determine more correctly the true and scientific explanation for the death.

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## FRACTURES IN THE REGION OF THE WRIST IN CHILDHOOD, PUBERTY AND ADOLESCENCE\*

CARL L. GILLIES, M.D., Iowa City

Since the publication of the now classical description in 1814 by Colles<sup>1</sup> "On the Fracture of the Carpel Extremity of the Radius," bony injuries of the wrist in adults have been studied in the minutest detail. This is not true, however, of fractures in the region of the wrist before the closure of the epiphysis. These are but briefly mentioned in the textbooks on fractures, and they have not received the attention to which they are entitled from their frequent occurrence. There are available, however, excellent essays by Iselin<sup>2</sup>, Vulliet<sup>3</sup>, Burnham<sup>4</sup>, Troell<sup>5</sup>, and others, dealing with this type of injury.

This paper is based upon the critical study of the radiographs of 260 consecutive fractures in the region of the wrist before the closure of the epiphysis. Arbitrarily, only fractures within two inches of the wrist are included. Obviously, in

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small children this includes true forearm fractures.

Modifying the classification of Troell, the 260 fractures are grouped in Table I.

TABLE I

	Cases	Per Cent
1. Torus or folding fractures.....	94	36%
2. Transverse fractures: Both bones.....	58	
Radius alone.....	28	
	86	33%
3. Epiphyseal separations.....	57	22%
4. Classic radius fractures (Colles).....	15	6%
5. Carpal fractures.....	4	1.5%
6. Isolated fractures of the ulna.....	4	1.5%

It may safely be assumed that the resulting bony injury is directly dependent upon two factors: first, the structure of the bone, and second, the amount and direction of the force received. The structure of normal bone before maturity is necessarily to a large degree determined and dependent upon the age of the individual. As the vast majority of these injuries are produced by a fall on the outstretched arm, the hand striking the ground in dorsiflexion, the injury received is likely to be the resultant of two or more separate forces acting in different directions, such as flexion and longitudinal compression.

1. Torus or folding fractures occurred in 36 per cent of the cases. They are characterized by a localized bulging or torus due to a telescoping of the bone from a longitudinal compression or thrust force, the diameter of the bone being enlarged at the expense of the length. The bulging usually occurs on the posterior surface, and may be accompanied by posterior tilting of the distal fragment. A minority of cases resulting from falls on the hand in palmar flexion, show the reverse of this deformity. The amount of displacement and the involvement of one or both bones is dependent upon the force received. Flexion, to be described later, is often present to some extent. This type of fracture is primarily an injury of childhood and, in fact, is the most common bony injury of childhood. It occurs under fifteen years of age, the average age of the patients being 10.5 years<sup>6</sup>. The fractures in all cases are relatively, and in most cases actually, higher above the wrist than the classic radius fracture of adults.

2. Transverse fractures were present in 33 per cent of the cases. As the name indicates, the fracture lines are transverse, and no visible cortex bulging or torus is present. These are fractures of flexion, flexion being defined as the action of parallel forces acting in opposite directions, much as one would break a stick over the knee by grasping both ends. The radius alone or both the radius and ulna may be involved, and the fracture may be either green stick or complete, depending in a given case upon the duration and degree of the force received. These are also injuries of

childhood occurring under fifteen years of age, and, as in the torus fractures, the point of fracture in all cases is relatively, and in most cases actually, higher than the classic radius fracture of adults. The deformity, if present, is usually a posterior tilting of the distal fragments.

3. Epiphyseal separation occurred in 22 per cent of the 260 cases, and is characterized by a separation, or as some prefer to call it, a fracture at the junction of the epiphyseal cartilage with the diaphysis. Displacement, if present, is always posterior. Usually a small fragment of the posterior cortex of the diaphysis remains attached to the cartilage and is displaced with it. This is primarily an injury of puberty, occurring during the period of most rapid growth, at which time the attachment of the epiphyseal cartilage to the diaphysis, due to the rapid cell proliferation, becomes the point of least resistance. The average age of patients showing this injury was fourteen years.

4. Classic radius fractures occurred in six per cent of the cases. It is found only in the period of adolescence at the patient approaches maturity. These fractures were within three-fourths of an inch of the wrist joint, and showed the typical posterior tilting of the distal fragments, the tip of the styloid process of the ulna usually being broken also. Little comminution was present and the articular surface of the lower end of the radius was not involved by a fracture line in any one of the fifteen cases.

5. Carpal fractures were present in four cases, or 1.5 per cent. Three patients approaching maturity showed typical transverse fractures. One case in a boy of ten, the result of a crushing injury, sustained fractures of the scaphoid, os magnum, and cuneiform. From the few reported cases one learns that injuries of this type in a boy of ten are so rare as to be curiosities.

6. Isolated fracture of the ulna was present in four cases, or 1.5 per cent. All were in small children, the average age being four years, and apparently due to direct violence.

#### CONCLUSIONS

Before the closure of the epiphysis, age bears a very important relationship to the type of fracture that is likely to be sustained by a given force, namely, a fall upon the outstretched forearm. While there is some overlapping in the different age groups in childhood the characteristic fractures are either transverse or torus, the point of fracture being above the site of the classic radius fracture in adults.

At puberty the typical injury is separation of the epiphysis, usually with posterior displacement. Only in adolescence as the individual approaches



maturity, are the adult types of injury found, such as classic radius fracture and fracture of the scaphoid.

In no instance of fracture of the radius and ulna was the articular surface involved. While such cases have been reported, they are exceedingly rare. It was also noted that comminution was never severe. Dislocation of the carpal bones did not occur.

In closing, I wish to express my sincere appreciation to Dr. Jeannette Dean-Throckmorton and the members of the staff of the Iowa State Library for their able assistance in the preparation of this paper.

University Hospital.

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#### SKIN INFECTIONS IN THE NEWBORN\*

JAMES DUNN, M.D., Davenport

Because of the slight resistance of the skin in the newborn, a larger proportion of skin infections are seen during the first weeks of life than at any subsequent period. Few infants escape some form of dermatosis. During the last weeks of intra-uterine life the sebaceous glands of the fetus are very active. Their excessive excretion forms the vernix caseosa, a cheesy deposit composed of sebaceous material, lanugo hairs, and epidermis. At birth this deposit is removed and leaves a tender, soft, hypersensitive skin exposed to various irritants. Although skin infections in the newborn are numerous, many of these diseases occur so infrequently that they are of very little interest to the general practitioner.

I wish to bring to your attention two skin infections in the newborn that are seen frequently and are of interest to every practitioner.

The first of these, erysipelas, is a preventable disease. I am glad to say that it is not as prevalent today as formerly. This is because greater attention is given to the hygiene of the newborn; however, erysipelas still occurs when the delivery is in the home as well as in institutions.

The cause of the disease is several strains of streptococci. The infection generally occurs during the first week after birth. It may occur

through the umbilicus, or any point of abrasion in the skin. The infant shows symptoms of a general infection, refuses to nurse, has a high temperature, may vomit, has diarrhea, or convulsions, and usually has great prostration. Regarding erysipelas in the newborn, Cushing<sup>1</sup> states: "Facial erysipelas usually is quite toxic, with high fever and delirium, but running a brief course, ending in a sharp crisis, and practically all the patients recovering. Those affected in one extremity only, usually one leg, are less toxic and also benign, practically all recovering in a brief period. Those in which the body is involved, compose the worst group of all, with very high mortality and usually a prolonged irregular course."

The first case to come under my observation, was a home delivery. The cord became infected, erysipelas of the abdomen developed, and, the result, of course, was death. I was recently called in consultation to see an eleven day old infant. The mother's delivery had been instrumental, there was no evidence of infection and the puerperium was uneventful. On the seventh day the infant developed a temperature of 100 degrees; its abdomen became distended, and there was swelling of the scrotum, which was dark red in color. Smears taken from a slight discharge from the navel revealed the presence of streptococci. Before the infant died the swelling and redness had extended to both groins. In my experience, the only infants to recover from erysipelas have been those with facial infections.

The prognosis in erysipelas in the newborn is extremely grave. There is no specific treatment and the mortality is high. Cushing<sup>1</sup> says: "There have been more methods of treatment advocated for erysipelas than for any disease, even more than for whooping cough, which is to say a good deal." It is difficult to evaluate any method of treatment because erysipelas is a self limited disease. In the newborn the administration of drugs internally is almost valueless; with local applications of drugs the mortality is 90 per cent, and blood transfusions have been found of doubtful value. When erysipelas, in the newborn, has been treated with anti-streptococcic serum the percentage of deaths has been slightly lowered, but many still report a mortality as high as 85 per cent. These discouraging results are due, probably, to the multiplicity of strains of the organisms which compose the streptococcic group.

A treatment which is receiving some attention is ultraviolet radiation. Nightingale and Starr<sup>2</sup> report that of twenty-three cases, all under one year of age, treated by this method, the mortality rate was only 30.4 per cent. Quoting from their article: "These ultraviolet rays are directed to

\* Presented before the Eighty-third Annual Session, Iowa State Medical Society, Des Moines, May 9, 10, 11, 1934.

an area extending from one to two inches beyond the spreading border, the burner is ten inches from the patient. The patient is exposed for three successive days receiving one and one-half times the erythema dose, regardless of the clinical course." Their conclusion is that ultraviolet radiation should be considered the most successful method of treatment for erysipelas; that it is more successful than serum therapy, less expensive and less dangerous to the patient.

The second skin infection I shall discuss briefly this afternoon is impetigo contagiosa neonatorum, sometimes called pemphigus neonatorum. It is the most interesting of skin infections in the newborn. This may be because it is the most common. Tilbury Fox in 1864 first described it, but curiously enough it was fifty-three years later before a widespread epidemic called the attention of the profession to this disease. Since 1916 medical literature has been replete with discussion of this infection. It has become a distressing problem in this country and abroad, in hospitals, nurseries and with the general practitioner delivering babies in the home. Regarding its prevalence, Brenneman makes the assertion that hospitals in which impetigo contagiosa neonatorum does not occur either have no maternity wards or else fail to recognize the disease.

Impetigo contagiosa neonatorum is caused by the staphylococcus aureus. Falls, in 1916, after self-inoculation and animal experimentation, published the results of his investigation. He found the offending organism to be a strain of staphylococcus aureus, which fulfilled all the requirements of Koch's law. The pemphigoid nature of the disease in the newborn is due to the anatomy of the skin. It has been proved that the same infecting organism produces impetigo later in life.

The disease usually appears from four to fourteen days after delivery. There develops on various parts of the body, vesicles, bullae or blebs, usually situated on an erythematous base. At first the vesicles are tense, but they soon become flaccid. The content, at first clear, soon becomes turbid. The lesions appear in crops that rupture easily, and leave raw surfaces with a fringe of epidermis which is undermined by serum.

The two types of this infection are: first, that in which the skin lesions are not numerous, and there is a freedom from systemic disturbances; and second, that in which the skin lesions extend over large areas of the body, and the infection is accompanied with fever and other systemic manifestations.

Reed<sup>3</sup> classifies all pustular skin infections in the newborn as "pyodermatitis." He says that the histologic findings in all are essentially iden-

tical, and that they show a common origin. He asserts that pemphigus, impetigo, multiple abscess, and dermatitis exfoliativa are all phases of the same infection. Strange as it may seem there have been over thirty cases of congenital impetigo reported. Reed<sup>3</sup>, in a very interesting article, reported nine cases of congenital impetigo at the Wesley Memorial Hospital in Chicago. Rubell<sup>4</sup> later reported three cases at the Mt. Sinai Hospital in Chicago. It was his opinion that one of these cases was the cause of a severe epidemic of impetigo neonatorum at the Mt. Sinai Hospital.

The sources of infection of impetigo contagiosa neonatorum are very numerous, therefore, prophylaxis is of paramount importance. During delivery the infant may become infected from his mother's birth canal. Later staphylococci in her breast milk, without associated mastitis, may be the cause of infection. The physician may be a source of infection. Reed<sup>3</sup> says: "The unclean obstetrician, the gynecologist whose hands are daily plunged into suppurative pelvic organs, the general practitioner who is compelled to attend illnesses that are openly or possibly septic, cannot exonerate himself from guilt." The nurse unknowingly may infect the infant with hands unclean from giving enemas, from handling soiled dressings, or from the caring for infected infants. If the infant escapes all these sources of infection he is still exposed when he comes in contact with anyone who has pustular acne, furunculosis, paronychia, or chronic nasal infections.

There are a large number of prophylactic measures used to protect the infant from these numerous sources of infection. Kellert<sup>5</sup> advocates a 50 per cent solution of glycerine kept in a stock bottle, and sterilized by boiling in an autoclave. "The solution should be poured from the bottle on cotton and daubed over the skin, nails, scalp, etc., following the bath." Keho<sup>6</sup> says: "Should the conclusion that the child is infected at the time of birth be correct, then the time to apply the antiseptic is at the earliest possible moment. The method is to use a one per cent oleate of mercury ointment prepared with lard or olive oil, for the removal of the vernix caseosa." Rulison<sup>7</sup> emphasizes the necessity for small nurseries as a prevention of the disease. "Each nursery accommodating but six babies, and each baby having a unit containing all the necessary requisites."

Chadwell's method<sup>8</sup> is to remove the vernix caseosa with a soap and water bath, then to anoint the entire body vigorously with a five per cent ammoniated mercury ointment, rubbing it in well, particularly in the axilla, groins, face and scalp. The subsequent care of the skin should consist of a complete and vigorous rubbing daily with



sterile cottonseed oil. In the hospitals of New England there are 1300 beds using this treatment. There has been no epidemic of the disease since 1925. This method does not irritate the kidneys.

Guy and Jacob<sup>9</sup> claim that they have had a chemical dermatitis in the newborn from the use of five per cent ammoniated mercury ointment. They modified Chadwell's treatment and are now using two per cent ammoniated mercury ointment as follows:

#### A. Delivery Room

1. As soon as possible after birth, babies are cleansed thoroughly with sterile liquid petrolatum.
2. Each baby is rubbed from the top of the head to the soles of the feet with two per cent ammoniated mercury ointment.

#### B. Nursery

1. Daily cleansing is accomplished by thoroughly anointing the child with cottonseed oil, applied with sterile cotton.
2. Soap, water or powder is not used.

Their results are as follows: in 1929 at the Elizabeth Steel Magee Hospital in Pittsburgh there were 2,344 deliveries with 34 cases of impetigo. Early in 1930 the modified Chadwell prophylactic treatment was instituted. In 1930 two cases occurred in 2,363 births; in 1931 one case in 2,883 births; in 1932 one case in 2,522 births; and in 1933 no cases occurred.

If after all these precautions have been taken the infant becomes infected with impetigo contagiosa neonatorum, what treatment is best? Ointments which are effective in adults and older children seem to favor the spread of impetigo in the newborn. Sixteen years ago Cole and Ruh<sup>10</sup> came to the conclusion that the "dry treatment" was best. This treatment is to open each vesicle with a cotton applicator dipped in alcohol, then to swab the base of the lesion with a three to five per cent solution of silver nitrate. Rood Taylor has reported satisfactory prophylaxis and treatment by heavily coating the entire body of the infant with a dusting powder consisting of mercurous chloride, three parts; talcum, two parts; and zinc oxide, one part. After each vesicle has been opened with a cotton applicator, dipped in alcohol, a solution of mercurochrome for skin disinfection may be used; this solution should be composed of mercurochrome, two per cent; alcohol, fifty-five per cent; and acetone, ten per cent.

#### SUMMARY

1. The epithelial cells of the skin in the newborn are less coherent than in later life. This

makes the infant more susceptible to skin infections.

2. Skin infections in infants assume a different character than in later life.

3. In the newborn the two most common skin infections are erysipelas and impetigo contagiosa neonatorum.

4. Erysipelas is an extremely severe disease with a very high mortality. It is a preventable disease.

5. Impetigo contagiosa neonatorum is important scientifically and economically because of its frequency. It is a preventable disease.

6. A "dry treatment" of the disease is considered best.

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#### CHILD NATURE AND THE CHILD'S EMOTIONAL NEEDS\*

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David Starr Jordan, a great educator, once said: "There is nothing in all the world so important as children; if ever you wish to be of real use in the world, do something for children." May I add that in the light of the growth of our profession, he was invariably right, for we now know that one of the most common causes of the various forms of nervousness and mental ills is the failure of the individual to develop in an orderly manner which presupposes the gaining of control of the instincts and their practical guidance in forms of activity that are both personally acceptable and socially useful to the individual and to society. Because of our failure to recognize the truth of this principle, and to give it due recognition today, we find that few of us have any adult patients. It is true that our waiting rooms are crowded with mature people—that is, people who have matured physically, but who are still children in their emotional and mental characteristics. Dr. Collins, the eminent neurologist, in his book entitled "The

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Doctor Looks at Love and Life," describes in detail the symptoms of the matured infant, making it very plain that every exaggerated character trait is evidence of an unbalanced personality.

The number and character of neurotic symptoms and traits is legion, but perhaps none is more common than a feeling of inferiority. Almost every neurotic individual has an exaggerated feeling of inadequacy, which is developed beyond the normal, hence it leads to an attitude of self-depreciation, which is in reality an undervaluation which frequently is so strongly entrenched in the subconscious mind as to paralyze all effort. These feelings of inferiority are often caused by the attitude of parents and teachers. I have in mind a girl whose physical make-up was fairly adequate, but as a little girl she was clumsy, pigeon-toed and inclined to be afraid to use her body. Her parents laughed at her attempts to walk and run. This exaggerated her timidity and encouraged her not to try the usual physical activities. Likewise, in the physical education classes of the school, she became the object of ridicule on the part of other children, she grew very rapidly, and at twelve was far too large and heavy for her age. Children called her "Fatty," so she avoided them and took no part in their games or sports. As she grew in maturity, this lack of confidence extended to every part of her life, and later when circumstances forced her to face reality and assert herself, she developed a serious nervous condition.

Much exaggeration and even lying among children comes from the desire to be superlative. It is perfectly natural for a child to say that he can jump further or run faster than his playmates. This desire to excel is natural, and if properly guided, it can be used to great advantage, but when misguided it frequently becomes the source of many nervous conditions which result in anti-social acts.

To illustrate my point, may I cite a case where this desire to excel was improperly guided. John, an intelligent boy thirteen years of age, lived with his sister and her husband. In this home he not only missed the affection of his parents, but he was scolded and punished by his brother-in-law for doing things that were perfectly natural for a boy of his age. Gradually, his reactions tended to become abnormal; he became discouraged, shy and reserved; then he became sullen and insolent, and began to steal. When this boy was placed in a different environment, he responded quickly to encouragement and praise. He lost all his sullenness, and became a contented willing worker, eager to please. To make clear the proper guidance of this childish desire to excel, I would like to cite another case. Mary, a little girl, four years of age,

a sensitive child who had already begun to show talent in the artistic line, observed her playmate triumph over his mother and get what he wanted by resorting to spells of screaming. For some time, Mary's mother had noticed that Mary's playmate was successfully practicing this method, and she was expecting that Mary might try the same plan. It was not long until one day Mary flew into the house screaming in almost the same manner as the boy, and demanded some trivial thing. She was told quietly, but firmly, to stop at once, that her mother knew exactly what she was up to. She was told that if she tried to do it again, she would be punished. Two days later, she repeated the trick and received the promised punishment. This treatment put an end to the child's experiment without any harmful effects.

These examples make it plain that in dealing with the emotional nature of the child, we have to consider two factors; first the physical condition of the child and second his developing personality which may be subdivided for study into the egocentric tendency, the will to assert the self; and the altruistic tendency, the desire to protect the self by being approved and accepted by the group. A normal personality is found in those who during childhood developed in such a way as to strike a happy medium between these two extremes. Whenever, we find a large degree of variation from this happy medium line of average, we find an abnormal personality. Abnormal personalities and abnormal nervous conditions are one and inseparable. This being so, it is the duty of the doctor and the teacher to assist the parent in understanding the emotional needs of the child. To make this plain, let me cite J. C. Flugel of the department of analytical psychology of the University of London, England, who in his psycho-analytic study of the family, states regarding this problem of directing the child's development along the line of the medium of the altruistic and egocentric tendencies: "For this reason it is obviously unwise for parents ever to immerse themselves to such an extent in their children and their children's affairs, that they absorb the whole of the child's emotional and intellectual capacities." If this happens, the child is bound to develop as an unsatisfactory member of society.

It is essential that the will to assert the self be recognized in the child, that it not be dominated and crushed, nor allowed unreasonably to dominate others; it should be directed by reason and encouraged by experience. In dealing with the adult case of nervous disorders we must bear in mind that every experience of the patient from childhood has molded his subconsciousness and fixed his reactions. Knowing this, we can probe



into the mental causes and assist him to rationalize his abnormal tendencies back to normal.

The modern teacher trained in the psychology of childhood is the doctor's best assistant in preventing the development of abnormal adults. The parent in the home and the teacher in the school must watch for any abnormal tendency. If the child is dominated too much, one of two things will happen. First, if he is naturally an introvert, he will become shy, reserved and weak, and as a consequence will fear others during the rest of his life. He will fail to become self-reliant, will lack initiative, and will depend on others for the rest of his life. On the other hand, if he is naturally an extrovert, he will resent being dominated, become insolent and rebel against authority.

In the former case, we frequently find the individual who experiences the nervous breakdown, which if not due to any organic biologic cause, is nothing but an attempt of the introvert to escape reality. When forced to rely upon himself and face reality, this type of person seeks refuge in flight by withdrawing within himself. To do this, the subconscious mind sets up numerous queer mechanisms which enable the person to escape reality and claim the attention and care that is always given to the sick.

This paper is not a plea for unlimited freedom on the part of the child, because the extreme extrovert must be guided and controlled, so as to develop into a normal person. In doing this the dominant egocentric tendency must be guided into the altruistic tendency. If we succeed in doing this, we have solved the problem, and in the words of Dr. Leta S. Hollingsworth, we will produce "an adequate adult," fit to engage in the trials of maturity and of old age without a nervous breakdown. If we do this successfully we will have weaned the child psychologically by the time he is twenty years of age. At this time, he should have left home in his feelings. He should have broken the habits of childish obedience, dependence and protectedness, which are inevitably fostered by the immaturity of childhood, and should be ready to face the world and intelligently direct himself.

## RESPIRATORY INFECTIONS IN THE NEWBORN\*

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In preparing for discussion the subject of respiratory infections in the neonatal period of life, my first realization was that after eliminating primary and acquired atelectasis, congenital stridors resulting from the various anatomic and physiologic

causes as not being infections *per se* and further discarding all cases over one month of age, I have, in a fairly busy practice of more years than I care to mention except in strictest confidence, seen and cared for relatively very few cases of infection of the respiratory tract developing during the newborn period of life.

In an endeavor to gather data from sources of wider experience, I was surprised to find contemporary and current medical literature singularly barren of information or statistics relative to morbidity, mortality and management of respiratory infections other than congenital pneumonia in neonatal life.

A study of purely infectious diseases of the respiratory tract limits us to the consideration of:

1. Acute rhinopharyngitis.  
Paranasal sinus infections.
2. Acute bronchitis.
3. Pneumonia—almost invariably bronchopneumonia.
4. Congenital pneumonia.

May we first briefly sketch the anatomic background as it occurs in the normal newborn infant.<sup>1</sup> Congenital anomalies of the upper respiratory tract are comparatively infrequent. At birth, the nasal cavity is very small; its height, eighteen millimeters; at the posterior naris, seven millimeters; and its breadth between the pterygoid processes, nine millimeters. The respiratory portion comprises only one-third of the nasal cavity. Its mucous membrane is very delicate and extremely vascular. The accessory sinuses are poorly developed, so much so that we assume their non-existence. The frontal sinus is rudimentarily one of the anterior cells of the ethmoid sinus. The maxillary sinuses are, however, well developed. They are cavities eight by six by four millimeters and may have the orifice occluded. At definite paths along the nasal cavity, each sinus has its starting point. All except the sphenoid develop from the middle and superior meatus. In sequence of development, they are maxillary, ethmoid, sphenoid and, last, frontal. Pneumatization of the ethmoid cells is complete at birth. The pharynx is very small, has a rich vascular and lymphatic supply, and the looseness of connective tissue between the pharynx and the spine permits a large accumulation of pus. The opening of the eustachian tube is on a level with the floor of the nasal cavity. Its opening, although small, is unguarded, giving every access to the middle ear. The larynx is likewise small, funnel shaped, with its point downward. Its mucosa is extremely delicate and highly vascular. The trachea is short, elliptical, and during the neonatal period is easily compressible. The bronchi are very short and the lumen very small. The lungs

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are small, highly vascular and numerically have a full complement of alveoli. Postnatal growth is due to an increase in the size of air cells. During the neonatal period, there is a marked deficiency of elastic tissue. The vascularity is excessive and favors hyperemia and hypostatic changes.

Little is definitely known of the physiology of the upper respiratory tract, and that little is unfavorable insofar as resistance and control of infection is concerned. The mucous glands function poorly. The compressibility of the trachea is a liability. The lungs, because of feeble elastic tissue, are difficult to distend—favoring atelectasis. Breathing is diaphragmatic because of the weakness of the intercostal and pectoral muscles. Coughing is necessarily feeble and inefficient. It is practically impossible for a newborn infant to expel secretions. Anatomically and physiologically, this set-up seems to invite infection and insure disaster.

Sources of infections are obvious and simple. Infection may be acquired during passage through the mother's vagina, from water used for bathing, or from attendants who may or may not have active nasal and throat infections. Germ implantation of the nasal mucosa easily invades the trachea and bronchi with resulting acute bronchitis. Perhaps the most frequent cause of acute bronchitis and bronchopneumonia is the aspiration into the lungs of amniotic fluid with its rich sedimentation of vernix caseosa, desquamation cells and lanugo, etc.

All this would seem to justify the expectation of a rather high incidence of acute upper respiratory infections in the newborn. Available statistics do not realize that expectation and in private practice we do not see many cases even when colds are epidemic among children and older infants.

Commenting on the high morbidity of acute respiratory infections in the infant ward, Dr. Joseph Brennemann<sup>2</sup> says: "While I am extremely careful and apprehensive about the spread of respiratory tract infections in an infant ward, that is of older children with respiratory tract infections, I do not at all have that feeling with reference to the newborn in a maternity ward. I do not know whether it is because these newborn babies are normal and therefore do not transmit things from one to another or because they have a relative immunity. I would be half inclined to think it was the latter because there must be internes and nurses and doctors who look at them who have respiratory tract infections and yet the babies apparently do not get them. I have much the same feeling about newborn babies, or I might say babies of the first couple of months or so, in private practice. They certainly do not seem to

get these things. A newborn baby is probably healthy and has had all that is coming to him before he is born and commonly shortly afterwards, and that is probably also true of the well nourished baby in private practice. There may be a lot in the fact that colostrum is supposed to confer an immunity for a time against infection and that may be an item."

Recently a study was made by Dr. George Ormiston,<sup>3</sup> pediatrician in attendance on the newborn service at Washington University Maternity Hospital, St. Louis, showing the incidence of respiratory infections occurring from August, 1927, to April, 1934, in 10,055 births. The respiratory diseases were classified as follows: pneumonia, seven; acute bronchitis, one; rhinopharyngitis, thirty-seven, making a total of forty-five cases, and giving a morbidity rate of .44+ per cent. Incidentally, in this group there were thirteen cases of atelectasis; 60 per cent of the respiratory infections occurred in the months of December, January and February. Of the seven cases of pneumonia, all terminated fatally.

Illustrative of conditions in urban communities of our own state, I submit statistics from the records of the Visiting Nursing Service in Waterloo, covering 1932 and 1933. A total number of 286 newborn infants were given supervision until they were one month of age. Of these 286 babies, 100 were delivered in a hospital and remained under hospital care four days or less; 46 were delivered in a hospital and remained under hospital care longer than four days; 140 were delivered in the home and received home care throughout. Of this series of 286, twenty-one babies (seven per cent) developed respiratory infections. Of the 100 babies delivered in a hospital and remaining there only four days or less, eight babies (eight per cent) developed respiratory infections. Of the 140 babies delivered in homes, eleven babies (7.6+ per cent) developed respiratory infections. Of the 46 babies delivered in a hospital and remaining longer than four days, two babies (four per cent) developed respiratory infections. Of the eleven home born babies, five developed respiratory infections during the first week, three during the second week, and three during the third week. Of the eight babies born in a hospital and taken home on the fourth day or earlier, three developed respiratory infection during the second week of life and five during the third week. Of the two cases born in a hospital and remaining under hospital care more than four days, one developed infection the second week of life, and one the fourth week. Of this series of 21 cases, all were upper respiratory infections.



No one developed pneumonia; no one had a temperature above 101 degrees; all recovered.

No definite conclusion may be drawn from this inadequately studied series of cases unless we may assume that it fairly represents a cross-section of newborn morbidity in Iowa at its worst. All of these babies have a heritage of economic family distress; their mothers were nourished by the county (inadequately, we may assume); more than half, while born in a hospital, were removed to their homes in a few days; they were subjected to more than ordinary exposure; they all had contact exposure to a greater number of people than the average newborn; the other half were born in homes of the poor, in poorly ventilated, overcrowded houses; they were all exposed to the haphazard care of neighbors and older children except for the daily visit of a nurse. We are thus perhaps warranted in our assumption that the incidence of acute upper respiratory infections among normal newborn babies in urban and country communities of Iowa is rather negligible.

It has been said that anything may be proved by statistics. In contrast to the foregoing, may I submit recent studies by Dr. Margaret Warwick<sup>4</sup>, pathologist to the Millard Fillmore Hospital, Buffalo, New York. Dr. Warwick reports that in 240 consecutive autopsies upon infants, stillborn or dying during the first two weeks of life, pneumonia was found in 43 cases, or 18 per cent. Of these 43 pneumonia cases, ten (23.6+ per cent) were stillborn; eight (18.6+ per cent) lived less than twelve hours; 40 of the 43 cases lived less than five days; 24 (55.7 per cent) of the series lived less than two days, consequently, these 24 cases must have been affected during intra-uterine life—true congenital pneumonia.

It is interesting to note that in this series of 43 pneumonia patients, fourteen were delivered by version and extraction (32.5 per cent); ten were delivered by the use of forceps (23.5 per cent); twelve were spontaneously delivered (25.5 per cent); three were Cesarean sections (7 per cent).

#### AUTOPSY FINDINGS

Aspirated fluid in lungs in	38 cases	88 %
Meconium	30 cases	70 %
Epithelium	21 cases	49 %
Aspirated amniotic fluid was		
not present in only	5 cases	12 %
Bacteria were found in		
stained lung sections in		
only	11 cases	15.5%

During birth of this series the membranes ruptured as follows: not more than one-half hour prior to birth, 16 cases or 37.2 per cent; from one

to fifteen hours prior to birth, 11 cases or 25.6 per cent; time unknown, 11 cases or 25.6 per cent.

#### CONCLUSIONS

Congenital pneumonia in newborn infants is a definite entity and should be recognized as such by obstetricians. It begins in utero or during birth. The exciting cause is not definite, but seems to rest between bacteria contaminating the amniotic fluid or an irritating amniotic fluid, particularly containing large amounts of bile and cornified epithelial cells.

Cruickshank,<sup>5</sup> in investigating 800 deaths during the first month of life, found 197 cases of pneumonia (about 25 per cent) and concluded that pneumonia was the most common infection found in the newborn. In this series of 800 cases, 68 per cent of deaths resulted from asphyxia and atelectasis. From these findings, it is reasonable to assume that unrecognized pneumonia resulting from incomplete relief of atelectasis is a more frequent cause of neonatal death than has been realized.

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## ENCEPHALITIS AND MENINGITIS IN THE NEWBORN\*

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Encephalitis in the newborn is a rare condition. Neal<sup>1</sup> in 1921 in a study of 274 cases found but four cases of encephalitis in infants under three months of age. The earlier writings on encephalitis seem to be of a vague and uncertain character. These earlier cases were not recognized as encephalitis but were classed as the cerebral palsies of childhood. As the autopsies were usually performed several years after the active illness there was no positive knowledge as to whether the findings were of toxic, infectious or traumatic origin; or due to some other condition occurring later in life.

The first recorded study of infantile encephalitis was published in 1827. The author described a child with hemiplegia with hypertonia and contracture, accompanied by mental deficiency. From 1827 to 1884 many writers contributed to the knowledge of encephalitis, notable among these

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being Virchow. Strumpell in 1884 discussed the fact that in encephalitis the gray substance is affected, as the anterior horn cells are affected in poliomyelitis. He gave the disease the name of polio-encephalitis. Marie also supported this theory and brought out the close relationship between acute infectious disease and encephalitis. He maintained the theory that pathologically the condition was primarily a vascular involvement. The work of these two men have caused the name "Strumpell-Marie Disease" to be used frequently. Leichtenstein in 1892 brought to attention the frequency with which encephalitis followed influenza epidemics. He held that the bacillus or its toxin was the causative factor. Oppenheim in papers published from 1887 to 1901 discussed the various pathologic factors present in certain cases while very frequently other cases were mild. In 1907 he brought his work to a finish and showed that the disease had no definite localizing point in the brain, but might attack any portion or part of the cerebrum. He claimed that it could be of specific or nonspecific etiology and the end result was a chronic nerve disorder with the cerebral pathology as a softening sclerosis or atrophy.

The etiologic factors in the newborn and in the older child while clinically the same are necessarily somewhat different. In the older child we may classify them as:

1. Primary infections. Many different kinds of organisms have been found in the brain tissue of cases coming to autopsy.

2. Secondary to other infections. Either by direct bacterial invasion or by their toxins. Encephalitis may follow any acute infection, but invasion of the brain tissue following scarlet fever and measles seems to stand at the head.

3. Non-bacterial toxins may often be the causative agent, as in food poisoning. This type usually causes hemorrhagic encephalitis.

In the newborn the infection is most frequently passed from the mother to the infant, the infection which is present in the mother being transmitted to the infant. Primary infections may occur from those caring for the infant.

The symptomology in the newborn seems to be essentially the same as in the older child. The symptoms may be divided into three stages:

1. Initial or general. The onset is usually sudden in character, first noticed by loss of appetite accompanied by general apathy and inactivity. Vomiting is almost always present and occurs early. Convulsions occur early in the case of the newborn and usually are present. Convulsions may often be the initial symptom of the illness. The type of the convulsion will depend on the part of the brain involved and may be general or one-

sided, tonic and clonic in type, or only tonic. Stupor is usually present and at times neck rigidity and opisthotonus as seen in meningitis. These initial symptoms may persist for one or two days or may carry over and merge with the focal symptoms.

2. The focal symptoms as a rule make their appearance on the third day and their picture depends upon the localization of the process. The usual focal symptom is hemiplegia which is often a prominent factor in the diagnosis. The paralysis is at first flaccid but very soon becomes spastic. The upper extremities show more involvement than the lower ones, and are slower to return to function if recovery takes place, the fingers showing the least improvement. Other focal symptoms, of course, depend upon the part of the cerebrum involved and vary widely with the affected part. Recovery or death may take place during the onset or at any period during the development of the focal symptoms. Recovery may be complete or partial and if partial we have our third or final stage of residual symptoms.

3. If the symptoms during the second stage have indicated the presence of hemiplegia we will usually find some contracture and rigidity as a permanent result. As stated above, recovery starts in the lower extremities which show the greatest improvement, while the fingers show the least. Two-thirds of all cases show a residual facial paralysis. The patient's ability to return to daily work and normal activity is markedly interfered with by the increased spasticity and the ataxia, the usual remnants of the cases that do recover.

The prognosis must be guarded, as it is impossible to say that a given patient is well until several years after the initial illness.

The treatment is entirely symptomatic. Lumbar puncture is of no value and ventricular puncture seems to have no effect on the progress of the disease.

Moncrieff,<sup>11</sup> in reporting the following case, states: "because of its exceptional nature in that the symptoms appeared at the end of the second week of life, although there is no evidence that the mother was the source of infection." "A. B. was the first child, full term and normal delivery. At the age of fourteen days it was noticed that the child was irritable. Then drowsiness set in and it became increasingly difficult to arouse the child who was admitted to the hospital at the age of one month. The bowels were normal, there was no vomiting, no head retraction and no convulsions.

"On admission the baby lay in a very drowsy state, from which it could not be roused even for feeding. No cry could be elicited by any form of

stimulation. The left side of the face was paralyzed, and there was some slight rigidity of the limbs. The knee-jerks were active and the plantar responses flexor. The pupils were contracted and did not react to light. Ophthalmoscopic examination revealed normal discs. The fontanel was depressed, the temperature normal, the pulse 130 a minute. The urine was normal and the blood urea was 142 mg. per 100 c.c. Death occurred two days after admission.

"The postmortem examination showed no naked eye abnormalities of any organ. The brain was more congested than normal, but there was no localization of this congestion in any part of the brain. Portions of the cerebral cortex and basal ganglia were submitted for histologic examination. In the optic thalamus definite evidence of the presence of encephalitis of the 'lethargica' type was obtained. The perivascular lymphatic spaces were full of small round cells giving the appearance of 'cuffing' while there was also a more diffuse but less well marked infiltration of the brain tissue between the blood vessels. Other regions of the brain appeared normal."

Meningitis in the newborn is not at all a rare condition. The epidemic form is relatively rare, but the meninges of the newborn is susceptible to any of the organisms that are found as a causative factor in the older child or adult. The European medical journals show more case reports of meningitis in the newborn, than do our American periodicals. A check of the case records in two of the larger hospitals in our state for the past five years shows no cases of either encephalitis or meningitis for this age group.

Briefly reviewing the history of meningitis we find that petechiae were discussed as a prominent symptom in epidemics occurring prior to 1456. Today we believe these were epidemics of meningitis although petechiae may occur in other conditions. The first reported epidemic of meningitis was that at Lake Geneva in 1805, which lasted three months. Hirsch in 1885 discussed the history of meningitis and divided the epidemics of history into four periods.

The first period extending from 1805 to 1833, began with the Lake Geneva epidemic. During this period epidemics occurred in both the United States and Europe. The second period, 1837 to 1850, showed epidemics occurring, especially in the military centers of France, Italy, Denmark, Algiers and the United States. The third period, 1854 to 1875, epidemics occurred throughout the United States, Europe, Western Asia and to a lesser degree in Africa and South America. The fourth period extending from 1876 to 1881 showed epidemics of less extent than other periods

throughout the entire world. A fifth period is considered by some writers to have started in 1896 and extended up to the present time. Two great epidemics have occurred during this period. The one in New York, 1904 to 1905, and the one in Prussia, 1905 to 1907. It was during this fifth period that Flexner produced his anti-meningococcic serum.

Moses Barron in 1918 after reviewing the literature found but nineteen cases of meningitis in the newborn, the first by Sherer in 1895.

The meningococcus meningitis is the causative organism in the epidemic form of meningitis. It is a gram-negative diplococci and belongs to a group of six similar organisms.

In reviewing the features of these epidemics we are struck with the fact that it is quite unusual to have more than one case in a household. In the New York epidemic of 1904 to 1905 there were only eighty-eight times out of 1,500 cases that there was more than one case in the same household.

In studying the various case reports one notes that the hemolytic streptococcus, the pneumococcus and the colon bacillus, in about the order named, are the infectious agents in a majority of the cases reported. Tuberculosis meningitis in the newborn is much less common than it is in the first half of the second year.

A diagnosis of meningitis in the newborn is exceedingly difficult. The symptoms are atypical; many infants die before definite symptoms develop, and it is only by an autopsy, if one is performed, that a correct diagnosis can be made. One case was reported of an infant three days old who died suddenly with only temperature, paleness and collapse as symptoms; another case was reported of an infant who died suddenly with only a pemphigus neonatorum as a symptom; yet autopsies of both these infants definitely showed that diagnoses of meningitis should have been made.

In the cases studied no two presented a like picture, except that loss of appetite, moderate diarrhea and vomiting seemed to be present in all cases; a triad that very easily leads to a mistaken diagnosis of a gastro-intestinal upset. The refusal of food with vomiting and diarrhea are early symptoms and these findings in an infant that is listless and apathetic, that is hypersensitive to handling, should arouse one's suspicion sufficiently for an early lumbar puncture. The temperature is variable, but averages 101 degrees. The pulse is usually from 120 to 160 a minute. The pulse temperature ratio with respirations of sixty to eighty a minute, in the absence of positive lung findings, is a diagnostic point. Stiff neck, bulging fontanel and Kernig's sign were absent in six out of eight



cases studied. General convulsions occurred in 50 per cent of the cases. Lumbar puncture in a positive case will reveal a straw colored or turbid fluid, a positive globulin, and a decreased sugar content. The pressure may or may not be increased. The cell count varied in cases studied from 280 to 5,350 per c. m. The cell content varied from 95 per cent polymorphonuclears in one case to 80 per cent mononuclears in another case. A stained film from the sediment may show the causative organism, while cultures of the blood and spinal fluid will usually give positive findings.

The prognosis must be guarded because 75 per cent of the cases terminate fatally. The duration of a case may vary from one or two days to a period of many weeks. The prognosis is much more favorable in the epidemic form, where our specific serum is available.

The treatment consists of the use of the specific serum in the epidemic form. The serum should be given both by spine and through ventricular puncture. Spinal and ventricular drainage is advised in the other forms; otherwise the treatment is entirely symptomatic.

#### CASE REPORTS

*Meningococcus Meningitis.*<sup>4</sup> J. R., baby girl, who had been delivered by forceps. She was admitted to the hospital at twenty-two days of age, because of fever, vomiting, irritability and anorexia existing for twenty-four hours before entrance. On admittance she was drowsy, but became irritable if she was disturbed. The anterior fontanel was tense, but not bulging; lateral nystagmoid movements of the eyes were noted; Kernig's sign was positive; no rash or petechiae were seen; otherwise the physical examination was negative. A lumbar puncture revealed a high cell count with many intracellular and extracellular gram-negative diplococci. The infant was discharged from the hospital as cured in fifteen days.

*B. Coli Meningitis.*<sup>9</sup> M. V. S. One month old female infant was brought to the hospital because of projectile vomiting and increasing diarrhea of five days duration. The night before the onset of the infant's illness the mother had a chill and fever followed by swelling and redness of her breast. The anterior fontanel was depressed; the temperature was 101 degrees; the neck was not stiff. The infant died in one week. Necropsy showed a thick fibrinopurulent exudate over the base of the brain, covering the medulla pons and cerebellum. B. coli were cultured from this exudate.

*Pneumococcus Meningitis.*<sup>7</sup> This case is extremely interesting in that the mother died of pneumococcic meningitis seventy-nine hours after

delivery, and fifty-four hours after the onset of the illness. Baby L., infant of R. M. L., was seen three days after the death of the mother, with a temperature of 103 degrees, taken by the rectum. The physical examination was negative and the temperature rapidly returned to normal. She was discharged from the hospital on the ninth day. Two days later the infant was returned to the hospital for generalized convulsions which had occurred during the preceding twelve hours. On entry a diffuse erythema was noted over the entire body. A short convulsion occurred on entry and there were short periods of rapid respiration every ten to fifteen minutes. The anterior fontanel was tense; there was no Kernig's sign or ankle clonus. A lumbar puncture produced a turbid fluid which cultured an organism proved to be Type I pneumococcus as in the mother. The infant died twelve days after birth and eight days after the death of the mother. Autopsy was refused in both cases.

*Streptococcus Meningitis.*<sup>12</sup> The patient, a female infant, about eighteen hours after normal delivery, had an attack of cyanosis with slight clonic twitchings and dyspnea which ceased in five minutes. Twelve hours later a similar attack occurred. The fontanel was normal; a distinct nystagmus with clonic twitchings was noted. A half hour later another attack occurred in which the infant died. Lumbar puncture produced a turbid yellowish fluid from which were cultured colonies of streptococci.

*Staphylococcus Meningitis.*<sup>12</sup> The patient, a female infant, four days after a normal birth, began to have clonic convulsions. The fontanel was normal; the temperature ranged from 38.2 to 39 degrees Centigrade; a lumbar puncture was unsuccessful. The child died on the sixth day. Autopsy showed a firmly adherent, dirty greenish-yellow fibrinous purulent coating. Smears showed intra- and extracellular diplococci and gram-positive rods. Cultures showed colonies of B. subtilis.

*Gonococcus Meningitis.*<sup>8</sup> The patient was delivered normally from a mother with gonococci cervicitis. Ophthalmia neonatorum developed on the second day. On the sixth day the infant became generally ill, fretful, refused food and swollen red joints were noted. On the eighteenth day a pure culture was isolated from the spinal fluid which proved to be the gonococcus. The infant died on the forty-first day. The same organism was isolated from the meningeal exudate.

#### CONCLUSION

In summarizing I wish to say that I have attempted to review the subject of encephalitis and meningitis as it pertains to the newborn, with numerous quotations and case histories illustrating



the various types of cases. The main purpose of this paper is to call to the attention of the practitioner that there are cases of encephalitis and meningitis in the newborn, so that he may watch for them, since the symptoms are not as pronounced in the infant as they are in the older child.

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## SEPSIS IN THE NEWBORN\*

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Theoretically the above term should include all those infections that may occur in the newborn in which generalized symptoms are produced. However many of these, such as smallpox, tuberculosis, syphilis, pertusis, and tetanus produce their own characteristic symptom complex. Clinically, therefore, this term is applied only to a general invasion by pyogenic organisms. This condition is also spoken of as puerperal fever of the child, pyemia, or septicemia. In the past as high as six to eight per cent of all the newborn would be affected by sepsis. Fortunately this high incidence rate has been greatly reduced since the advent of aseptic technic and is now practically unknown wherever rigid asepsis and prophylaxis are practiced in the delivery and care of the newborn.

## ETIOLOGY

The organisms most commonly found are the staphylococcus, streptococcus, and the colon bacillus. Others such as the meningococcus, pneumococcus, gonococcus, etc., are occasionally offenders. Regardless of the causative organism the clinical picture is practically the same. The

newborn is highly susceptible to septicemia because of his poor resistance to the pyogenic bacteria. This poor resistance is due to a lack of immune bodies, the low phagocytic powers of the leukocytes, the failure of the regional lymph nodes to hypertrophy in the presence of a spreading infection, and a failure of the leukocytes to increase in number.

The infection may occur before, during or after delivery. Before birth the infection may take place from a diseased placenta of a contaminated liquor amnion. During delivery the birth canal is obviously a source of infection unless the vagina, which normally harbors pyogenic organisms, is properly prepared. After birth the portal of entry may be the umbilicus, the skin, the digestive tract, the lungs, the mucous membrane of the mouth, or the middle ear. Although the conjunctiva and the vaginal mucosa are easily infected they are seldom the source of a general sepsis. At birth the skin has a poorly developed epidermis. Later this layer develops into a hard horny structure which provides considerable protection against infection and injuries. Consequently, improperly applied instruments in delivery, and careless handling or cleansing of the newborn, easily causes abrasions which readily become infected. Skin disorders of infancy, such as intertrigo and pemphigus, may pave the way for a general invasion by pyogenic organisms. The mucous membrane of the mouth is highly susceptible to infection and can be traumatized very easily by rough cleansing. Because of the peculiar anatomy of the eustachian tube in the newborn, infection may ascend from the pharynx to the middle ear, thence to the mastoid, and finally to the blood stream. The umbilicus can be infected from unsterile instruments, ligatures, dressings, or hands.

## PATHOLOGY

Regardless of the portal of entry the disease results from an extension of a local infection. This extension may be merely a discharge of toxins into the general circulation—a toxemia, or an invasion of the blood stream by the organisms—a true septicemia. In many cases there will be metastases to any of the organs, chiefly the lungs, pleura, liver, peritoneum, or meninges. Occasionally the bones, joints, pericardium, and heart valves are attacked. Septic thrombi and infarction are sometimes formed. Hemorrhages are usually found, and may occur in the skin, from the mucous membranes, or in any of the organs. Hyperemia and edema of the brain are usually present and the heart, liver, and kidneys show cloudy swelling. As a rule the spleen is enlarged.

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## SYMPTOMS

There may or may not be signs of a local infection such as inflammation of the umbilicus, stomatitis, rhinitis, otitis media, or a skin infection. There are so many portals of entry and the local signs may not be evident, that often no starting point can be found, giving rise to so-called cryptogenic sepsis. The general symptoms usually begin in the second week of life and depend upon the severity of the infection. The onset may be insidious or sudden. Fever is not a constant factor as it may be absent, slight, or very high; or it may be continuous or intermittent. In a premature or debilitated infant an afebrile course is often followed. Chills never occur, as in adults, but convulsions are not uncommon. The pulse is rapid and weak. Respirations are rapid and irregular. The infant appears to be acutely ill, is listless and weak and has a feeble cry. Marked pallor is present, as a rule. The child loses weight rapidly because of the tendency toward vomiting, diarrhea, and a failure to nurse well. Unless these factors are promptly and properly controlled, marked dehydration ensues. Jaundice, petechiae, purpura, and furuncles are often seen. Hemorrhages usually occur, particularly from the nose, mouth, navel, or bowels. There is a marked tendency toward sudden collapse, in fact death may follow a sudden collapse when no previous definite signs of sepsis have been present. This probably explains many so-called sudden or unexpected deaths in infancy.

As a rule albumin is present in the urine and pus cells and casts are frequently found. The red cells are decreased in number, often to the degree of a definite anemia. As a rule there is no increase in leukocytes. Positive blood cultures cannot be obtained in every case.

## DIAGNOSIS

When there is a demonstrable local infection and well developed symptoms of a general invasion the diagnosis is relatively simple. In many of the milder cases the general symptoms are slight and because of the nutritional disturbances they may be mistaken for a difficult feeding case. The character of the fever cannot be depended upon as a diagnostic feature. Fever, rapid weight loss, and hemorrhage are characteristic features when occurring in the second or third week of life. Jaundice appearing in the second or third week is suggestive. Enlargement of the spleen should arouse suspicion, but this may be due to many other causes. A definite diagnosis can be

made from a positive blood culture. At times sepsis must be differentiated from gastro-enteritis, severe local infection, hemorrhagic disease, or severe icterus. In the last two conditions the time of appearance of the symptoms practically makes the diagnosis.

## COURSE AND PROGNOSIS

In the milder cases the disease may run a course of several weeks, often resulting in complete recovery. As a rule it runs a short and stormy course, often terminating fatally in two or three days. Sudden collapse and death frequently occur when least expected or without previous signs of severe illness. Usually the prognosis is extremely grave. Death may result from the general sepsis alone or from a brain abscess, meningitis, pneumonia, peritonitis, or liver abscesses.

## TREATMENT

Of utmost importance in combating sepsis are prophylaxis, asepsis, and prompt treatment of any local infection. Certain fundamental principles should be followed in caring for the newborn.

1. If the mother has a puerperal sepsis, she should be isolated from the infant, and anyone taking care of such a mother should have nothing to do with the care of the child.
2. Attendants of the newborn must be free from respiratory and skin infections.
3. A mother with a respiratory infection should wear a mask while nursing the baby.
4. Asepsis in caring for the cord is essential.
5. Visitors with any infection should be excluded.

After sepsis has developed the treatment is primarily symptomatic. The nutrition must be maintained, resorting to gavage, if necessary. Because of the marked tendency toward dehydration, fluids must be forced. Many times this can be done only by proctoclysis, hyperdermoclysis, gavage, or the introduction of fluids intraperitoneally or intravenously. As a rule the first two methods are not very successful. High fever should be combated, preferably by hydrotherapy. This disease constitutes one of the definite indications for the administration of whole blood and the best results seem to be obtained when this is done intravenously. Stimulants are indicated when collapse occurs or is threatened. Injections of various sera or antiseptic drugs have not, as yet, proved to be of any definite value.



## Case Report

### CYANOSIS IN AN INFANT FIVE WEEKS OF AGE\*

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Baby W. was brought into my office January 2, 1934, in an extremely cyanotic condition. The mother stated that the cyanosis was first noted New Year's morning, and that it had been constant and increasing in intensity. The baby had eaten, slept and breathed regularly and freely. The last few hours of the thirty-six hours of the cyanosis, the baby had become rather restless, throwing its arms and legs about and not sleeping. The respiratory rate was not increased more than could be accounted for by this restlessness. There had been no spasm, no fever, no infection and no attacks of smothering or breath holding. In fact, he had been a normal well baby, gaining well on a milk and water formula until he became cyanotic on New Year's morning. The infant was five weeks of age.

Physical examination revealed nothing but the cyanosis. The temperature was normal and the urine was negative. The hemoglobin was 75 per cent; the red blood count, 4,210,000; and the white blood count, 6,600. An x-ray of the chest was made and revealed a normal sized thymus and heart, and no evidence of pulmonary or cardiac abnormalities. When the blood was drawn for a hemoglobin test, it was found to have a peculiar chocolate brown color which did not redden in the air. From this finding we made a working diagnosis of methemoglobinemia. This diagnosis was sustained by the discovery that the mother had worn recently dyed shoes New Year's Eve. When she reached home the shoes were very wet from the melting snow. It is easy to understand how she may have had shoe dye on her hands after removing her shoes and transferred it to the baby by handling him. The shoes were dyed black three weeks before.

We placed the infant in an oxygen tent and he recovered his normal color in twenty-four hours. We kept him in the hospital a week and let him go home, only to have the cyanosis recur within twenty-four hours. All symptoms were similar to the previous attack except that they were milder. He recovered in twelve hours in the oxygen tent. He remained in the hospital three days and returned to his home only to have the cyanosis re-

appear the first night. The infant was removed from the bed, room, clothes and previous environment and recovered spontaneously. Since then there have been no attacks of cyanosis and at this time I present a perfectly normal well-nourished nine months old baby to you.

I can see no explanation for the cyanosis other than shoe dye poisoning. The ordinary causes of cyanosis in an infant, such as congenital debility, thymus and sepsis were entirely absent. The peculiar brown color of the blood when a puncture was made in the finger, was in itself diagnostic of methemoglobinemia. This was not a nursing baby and thus could not have been affected by any drug taken by its mother. I examined the blood with a spectroscope the morning after the second attack, but could see no absorption bands of methemoglobin. The infant's color was normal at that time, however, and the concentration of methemoglobin would have been too slight to give an absorption band.

Fumes from aniline dye and nitrobenzene of shoe dyes, hair dyes, cosmetics, paints, and cleaning fluids, can cause such a methemoglobinemia. Babies are very susceptible. Cyanosis has developed in infants from contact with a laundry mark on the diaper. The laundry ink evidently contained the toxic substance. Samuel J. Levin of Detroit<sup>10</sup> has recently reported a case of shoe dye poisoning in a two-year-old girl, who wore recently dyed shoes from 10:00 a. m. to 3:00 p. m. and became deeply cyanotic. The blood was a dark brown color. Spectroscopic examination made the next day did not show a methemoglobin absorption band in the spectrum. Levin<sup>11</sup> has also reported a shoe dye poisoning in an eight months' old infant who wore recently dyed shoes but one hour and became cyanotic. Her blood was dark brown and did not redden when shaken up with air. Spectroscopic examination showed a faint but typical absorption band of methemoglobin. Both of his patients were treated by inhalations of oxygen, and both recovered.

The first cases of shoe dye poisoning following the wearing of recently dyed shoes were reported in 1900.<sup>1</sup> Black shoe dye<sup>2</sup> was responsible in most cases, but brown dye<sup>3</sup> was also reported from an army camp. Nitrobenzene<sup>4</sup> was found to be the toxic agent in most of the American cases, while aniline was the chief toxic agent<sup>5, 6, 7, 8 and 9</sup> in the European cases reported. Cases of both nitrobenzene and aniline poisoning are well known industrially. They have also been known to follow the use of hair dye and cosmetics containing either of these substances.

I want to express my appreciation to Dr. Sam-

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uel J. Levin for advice by personal communication.

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### THE FINLEY HOSPITAL CLINICO-PATHOLOGIC CONFERENCE

#### LONGEVITY AFTER CORONARY THROMBOSIS IN A YOUNG INDIVIDUAL

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It is common medical knowledge that an individual seldom has an attack of coronary thrombosis before the age of forty. It is also seldom that a patient who recovers from an attack lives more than five years. The following case report is unusual because of the active life the patient led for twelve years following the first attack of coronary thrombosis which occurred at the age of thirty-five.

#### CASE REPORT

The patient, a white male, thirty-five years of age, was admitted to The Finley Hospital on April 27, 1922. On the morning of admission, the patient had felt a "slight indigestion" with a burning sensation over the precordium. In a few hours a very severe precordial pain occurred which was described as crushing in character. This pain extended down the left arm. There was no history of any previous attacks.

*Past history:* The patient had influenza three years before this attack. There was no history of any other disease. There was nothing significant in the family history at this time.

*Physical examination:* On admission to the hospital physical examination revealed the following pertinent points: the patient was a well-developed, well-nourished male in very severe pain; he

appeared very pale, and there was a cold, clammy perspiration over the entire body; the temperature was 95.6 degrees; the pulse was 42 and very irregular; the blood pressure was 114/80. The respirations were 20 per minute and irregular. Nothing abnormal was noted in the examination of the head, neck, and lungs. The heart sounds were very weak and irregular. There were no murmurs or thrills. No enlargement of the heart could be determined by percussion. The remainder of the examination revealed nothing abnormal.

*Subsequent course:* The next day the patient seemed somewhat better. The precordial pain was still present but not so severe. The irregularity of the heart was also present and the blood pressure remained the same as on the first examination. On the second day following the attack the pain was still present. There was a temperature of 101 degrees. The white blood count was 15,000. The urine was negative and the blood Wassermann reaction was also negative. The precordial pain gradually disappeared during the next seven days. The temperature decreased to normal and the heart sounds became stronger and more regular. The blood pressure one week after the attack was recorded as 120/70. The patient was discharged as cured two weeks after admission to the hospital. The patient remained well and made no complaint of precordial pain or any symptom suggesting any abnormality of the heart from April, 1922, to July 22, 1934. He was frequently engaged in manual labor several hours a day during this interval. Three months before the last illness the patient passed an insurance examination.

*Present illness:* The patient awoke on the morning of July 22, 1934, not feeling very well, but he had no definite complaint until eight o'clock that evening when he was seized with a sudden severe pain which radiated to the left arm. He became nauseated and vomited several times. The patient was seen one-half hour later, at which time he was pulseless, very cyanotic, and only semi-conscious. Two hours later the patient was conscious, the pain was still very severe, the blood pressure was 130/78, the temperature 98 degrees and the heart rate was 68. There was an extrasystole which occurred every four to five beats. The heart sounds were very distant and weak, but the quality of the pulse was fairly good. Examination of the rest of the body was negative. The next morning the patient had a temperature of 99.6 degrees. The heart had the same irregularity as the night before and the tones were still faint. There was a soft blowing systolic murmur to be heard at the apex. The blood pressure was 96/66. An electrocardiogram was taken at this time which showed changes in the T wave very suggestive of

coronary occlusion. (See Figure 1.) The next day the temperature went up to 102 degrees. The blood pressure was 94/70. There was a very definite friction rub to be heard over the apex. The patient died suddenly seventy-eight hours after the onset of the last attack. Permission was not obtained to perform an autopsy.

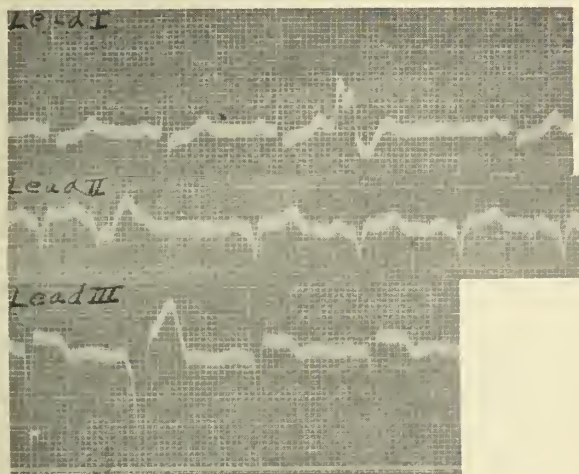


Fig. 1. Electrocardiogram taken fourteen hours after the onset of the second attack. Note the RST changes in Leads I and III which are very suggestive of coronary thrombosis. There is a left axis deviation. Ventricular extrasystoles are seen in all three leads.

#### DISCUSSION

During routine postmortem examinations one frequently finds evidence of an old, healed coronary thrombosis which must have occurred many months or many years previously. Many of the patients die from causes not related to coronary thrombosis. In a series of 143 cases studied by Levine<sup>1</sup> those who recovered from the initial attack lived about twenty-four months, while in White's series<sup>2</sup> they lived eighteen months. Levine<sup>1</sup> states that five years is generally the limit of life after the first attack. There are, however, reports in the literature indicating that a few patients live considerably longer. In 110 patients who recovered from the first attack, Connor and Holt<sup>3</sup> found that 3.4 per cent of these patients lived over ten years. Parkinson and Bedford<sup>4</sup> reported on a patient who lived eleven and one-half years, with the patient alive at the time of the report, while Jegorow<sup>5</sup> reported a case in which the patient lived fifteen years. Recently White<sup>6</sup> described a case of a man who lived seventeen and one-half years after the first attack. This patient was able to climb mountains at the age of seventy-two, ten years after his attack. His death was due to cerebral hemorrhage and, at autopsy, the heart appeared to be sound both functionally and anatomically. White<sup>6</sup> also reported another case in

which the patient was still living twenty years after the first attack. In this case report the patient had twelve years of activity without any known symptoms of recurrence during the interval between the first and second attacks.

Levine<sup>1</sup> is of the opinion that coronary thrombosis under forty years of age is somewhat more likely to be on a syphilitic basis than is the general run of cases of coronary thrombosis. In his series he found that the average age of patients with coronary thrombosis and a positive Wassermann reaction was thirteen years less than the general average. Connor and Holt<sup>3</sup> take a somewhat different viewpoint. They did not find any increased incidence of syphilis in their young patients. Smith and Bartels<sup>7</sup> reported two patients with coronary thrombosis, one at the age of thirty-five and one at the age of thirty-six, and found in the literature a total of twenty patients under forty years of age where autopsies had confirmed the diagnosis. All known etiologic factors, such as syphilis, infections, thrombi, etc., with the exception of coronary sclerosis, were excluded. This survey of the literature included cases reported by Dreshfeld<sup>8</sup> and Benda<sup>9</sup> both occurring when the patients were twelve years of age, and a patient by Jamison and Hauser<sup>10</sup> at the age of eighteen. In Jamison and Hauser's patient the Wassermann reaction was negative, although there was a history of syphilis in the father. Clark<sup>11</sup> describes an autopsy performed on a man who died at the age of thirty of coronary thrombosis in which no evidence of syphilis could be found. The youngest patient in Levine's series<sup>1</sup> was thirty-six years of age. The patient had had some distress in the precordial area for five years previously. The Wassermann reaction was positive in this case. Certainly we can say that when syphilis is excluded as an etiologic factor, coronary thrombosis under the age of forty is not at all common. In the case reported here one cannot say with absolute certainty that coronary thrombosis was the cause of the two attacks described. However, it would seem with a typical history and clinical findings in both attacks, and a suggestive electrocardiogram in the second attack that it is justifiable to report this case as a definite coronary thrombosis even though an autopsy was not performed.

One of the unusual features recorded about this patient during the first attack was the pulse rate of 42 per minute. It is possible that the patient could have had that slow a heart rate if a temporary heart block were present. However, it is more than likely that with the marked irregularity that was noted, many of the cardiac contractions were not palpable at the wrist. We are all familiar with the inaccuracies of the nurses' pulse charting



in cases of auricular fibrillation. It is probable that either frequent extrasystoles or auricular fibrillation was present and that only part of the cardiac contractions were discernible at the wrist. During the first attack the patient was given digitalis. We consider that digitalis is not indicated at the present time in cases of coronary thrombosis unless a definite heart failure occurs some weeks after the onset of the attack. Fortunately, this patient did not receive enough digitalis to get the physiologic effect or the outcome of the first attack might not have been as favorable. Since the first attack, it was learned that a brother of the patient had dropped dead suddenly. While there was no postmortem examination, it was thought he died of heart disease, probably coronary thrombosis.

#### SUMMARY

A patient who presented the clinical picture of coronary thrombosis has been reported, the first attack occurring at the age of thirty-five, at which time the Wassermann reaction was negative. The patient enjoyed twelve years of an active life with considerable physical exertion before he succumbed to a second attack. Electrocardiographic and physical findings all tended to confirm the diagnosis of coronary thrombosis in the second attack. This case and other reports found in the literature indicate that we should be on the lookout for coronary thrombosis before the age of forty, as well as the fact that the fatalistic attitude that many physicians have taken toward possible recovery from an attack of coronary thrombosis is not always justified.

Note:—I wish to express my appreciation to Dr. C. C. Lytle for part of the clinical record of the second attack.

700 Locust Street.

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### REPORT OF CASES FROM THE BROADLAWNS GENERAL HOSPITAL Des Moines, Iowa

#### MENINGOCOCCUS SEPTICEMIA

JULIUS S. WEINGART, M.D.

G. J., Case No. 2211, at the Broadlawns Contagious Hospital. The patient was a young man, nineteen years of age, Caucasian race. He was admitted on October 3, 1934, with a history of headache and severe pains in the back and legs for two days. Physical examination showed the typical signs of an acute meningitis, stiff neck, bilateral Kernig tests, and hyperactive reflexes. His temperature was 103 degrees. Spinal puncture produced a cloudy fluid, and microscopic examination of this showed that it was purulent, and contained also numerous organisms, morphologically typical of meningococci. He was given three intrathecal injections of anti-meningococcus serum, 10 c.c. each, on October 4, 5 and 6.

The fluid was clear on October 5 and thereafter. Spinal punctures were done on October 8 and 10, but there was no further indication for giving serum. An additional reason for this was the fact that he had developed a rather severe reaction after the third dose. His meningeal symptoms cleared up rapidly. Even on October 6 he seemed much improved, and by October 9 he had no subjective complaints, the neck rigidity was gone, the Kernig's sign was absent, and only a little reflex hyperactivity remained.

However, he continued to have fever, and from now on scattered skin rashes began to appear in crops every day or two. These consisted of small erythematous, slightly raised papules, and occurred chiefly over the chest and abdomen. A systolic murmur was heard over the base of the heart, but no other physical signs of any consequence were found. There were no symptoms except those which might accompany any hyperpyrexia. It was at this point, on October 14, that the writer was consulted as to the diagnosis of this persistent fever. The fact that it was accompanied by patchy and peculiar skin rashes at once suggested to him the likelihood of a meningococcus septicemia, and blood cultures were advised, in the hope that the organism could be recovered. Two blood cultures were taken, the first on October 15, into nutrient beef broth, the second on October 24, into hormone liver-infusion broth and also into hormone agar reinforced with sterile ascitic fluid. Both broth cultures showed a growth of a pleomorphic gram-negative diplococcus morphologically similar to the meningococcus. Sub-



cultures on blood agar showed sticky grayish colonies. The growth was quite profuse. Agglutination tests were performed with this on October 28 in the pathologic department of the Iowa Methodist Hospital. The result was as follows—

- Emulsion of culture in
- 1/50

Horse serum, No agglutination.
- 1/100

Horse serum, No agglutination.
- 1/50

Polyvalent anti-meningococcus serum, Strong agglutination.
- 1/100

Polyvalent anti-meningococcus serum, Strong agglutination.
- 1/200

Polyvalent anti-meningococcus serum, Strong agglutination.
- 1/400

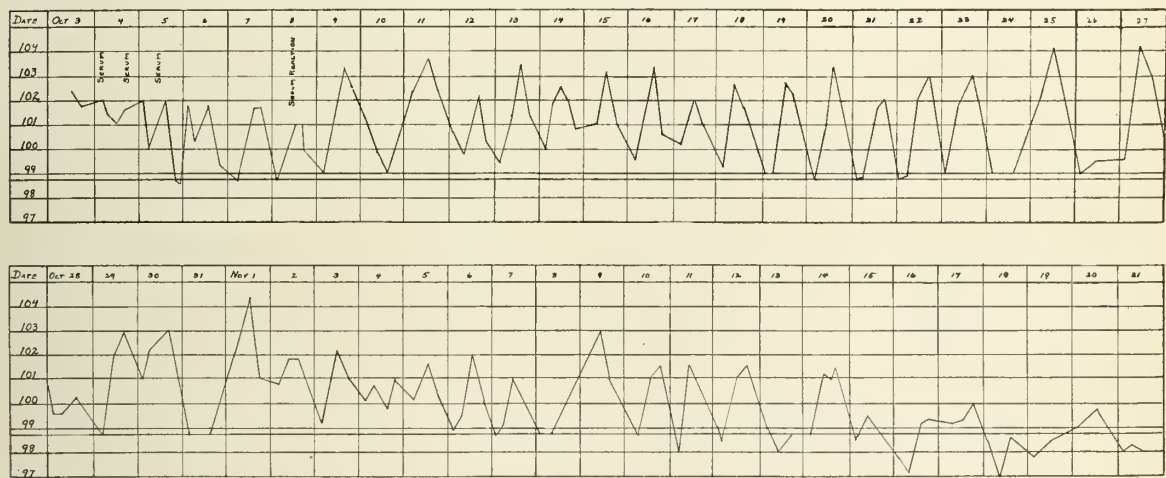
Polyvalent anti-meningococcus serum, Strong agglutination.
- 1/800

Polyvalent anti-meningococcus serum, Moderate agglutination.

He was discharged on November 29 with a normal temperature and feeling perfectly well.

DISCUSSION

The above case is reported, partly because of its unusual character, and partly to emphasize the clinical symptoms of meningococcemia. It is probable that in many cases of meningococcus meningitis there is an invasion of the blood stream, especially in the early days of the infection. The evidence for this, both bacteriologic and symptomatic, as evidenced by the petechial rashes, is already at hand. However, cases such as the one reported are not nearly so common, or at least they are not commonly recognized. In some, the evidence of meningitis may be absent, and in others, later complications, such as endocarditis, may appear. In any case, however, the combination of a continued



MENINGOCOCCUS SEPTICEMIA - TEMPERATURE CHART

Cultures were also sent to Dr. I. H. Bortz of the bacteriologic department of the State University of Iowa. He reported a confirmation of our findings.

The question of therapy was discussed. More serum seemed out of the question, as he had already had a rather severe reaction to it, and on October 30 and 31, marked local reactions followed intradermal tests. By November 1, although the patient had lost some weight, he felt well, even though the fever continued. The writer was of the opinion that the prognosis was fairly good, inasmuch as the mortality in the reported cases had not been high.

Vaccine therapy was suggested by some of the staff, and a brilliant victory for this type of treatment was missed, for, while it was being prepared, the patient's temperature dropped to normal and stayed there. A blood culture taken on November 22 remained negative after four days incubation.

fever with the occurrence of petechial or erythematous skin rashes should put the clinician on his guard. One curious fact in this case was the ease with which the organism was cultivated from the blood stream and the profuse character of its growth on subcultures. This, at first, made us fear that our diagnosis was wrong, but the agglutination tests were so definite that there could be no doubt. Some of our culture media were fortified at the time of taking the blood, by the addition of sterile ascitic fluid. Although this precaution did not prove necessary here, it is a wise one to take, in case meningococcemia is suspected, for certain strains grow only in very rich media.

The writer wishes to thank the members of the house staff of Broadlawns Hospital, especially Drs. F. Waknitz and B. E. Stofer for their assistance in the clinical and bacteriologic work on this case

1208 Bankers Trust Building.

# STATE DEPARTMENT OF HEALTH

*Walter L. Loomis*

## Deaths Due to Enteritis and Related Conditions

### Some Data Regarding Such Deaths in Iowa in 1934

CARL F. JORDAN, M.D., C.P.H.

Epidemiologist, Iowa State Department of Health

In the following paragraphs, information is presented relative to deaths which occurred in Iowa, particularly during July, August and September of 1934 and which were attributed to diarrhea and enteritis (under and over two years of age) and dysentery. The information is based in part upon a study of death records, but to a greater extent upon data supplied by physicians to whom questionnaire forms were forwarded. The department desires to express appreciation herewith to the physicians, 109 in number, through whose interest and cooperation 123 record forms were completed and returned. Table I shows the distribution by months, (January through September, 1934), of deaths in Iowa due to diarrhea and enteritis under and over two years of age, bacillary dysentery, amebic dysentery and dysentery (unclassified). The table indicates also the monthly distribution of the deaths represented by the 123 records returned by physicians.

#### ANALYSIS OF DATA IN 123 QUESTIONNAIRE RECORDS

##### I. Causes of Death As Stated.

The causes of death and their frequency as represented by the questionnaire records were as follows: (acute) enteritis, nineteen; (acute) gastro-enteritis, eighteen; (acute) enterocolitis, seventeen; cholera infantum, thirteen; (acute) dysentery, twelve; infectious enteritis (or diarrhea), eight; (acute) colitis, six; diarrhea and enteritis, five; (acute) bacillary dysentery, five; (acute) ileocolitis, four; gastro-enterocolitis, three; (acute) intestinal infection or toxemia, three; and intestinal influenza, two. The following additional causes were mentioned once each: ulcerative colitis (not amebic dysentery), amebic dysentery, intestinal intoxication, acute catarrhal colitis, intestinal colic, acute summer diarrhea, convulsions from toxemia, septicemia of bowels and intussusception (following enteritis).

TABLE I

Months 1934	Death Certificates Filed with Division of Vital Statistics					Deaths Represented by Questionnaire Records
	Diarr. & Enteritis under & over 2	Ameb. Dys.	Bac. Dys.	Dys. Unclass.	Total	
Jan. ....	12	0	0	0	12	--
Feb. ....	11	0	0	0	11	--
March ....	11	1	0	0	12	--
April ....	9	0	0	0	9	1
May ....	14	0	0	0	14	2
June ....	17	0	2	0	19	17
July ....	34	0	4	1	39	56
Aug. ....	74	2	17	5	98	45
Sept. ....	65	0	13	3	81	2
Oct. ....	--	--	--	--	--	--
Nov. ....	--	--	--	--	--	--
Dec. ....	--	--	--	--	--	--
Totals (For 9 mos.)	247	3	36	9	295	123

II. Prevalence and Distribution of Enteric Disease (exclusive of typhoid fever) in 1934.

Diarrhea and enteritis under and over two years of age and dysentery, were unduly prevalent in many parts of Iowa during 1934. Seventy-five physicians, or 69 per cent of those who returned the 123 questionnaires, stated that the incidence of these disorders was unusually high, especially during the warmer months. In 1930, deaths in Iowa due to diarrhea and enteritis (all ages) and dysentery, totalled 331. The total number of such deaths was 337 in 1931, 214 in 1932 and 246 in 1933. As indicated in Table I, the deaths during 1934 (the first nine months) and due to the causes mentioned, numbered 295. One or more of the 123 deaths under consideration, occurred in fifty-four counties, in all parts of the state. Eight deaths were recorded from Black Hawk county, seven from Lee, five from Appanoose, four each from Monroe, Polk, Van Buren and Wapello counties, and three deaths in each of the following counties: Boone, Cerro Gordo, Decatur, Linn, Montgomery, Muscatine, Plymouth, Poweshiek, Webster and Woodbury. Two deaths from the same causes occurred in each of eighteen additional counties and one death in each of the remaining nineteen of the fifty-four counties concerned.

III. Distribution of Deaths According to Age and Sex.

Table II shows the age and sex distribution of the 123 deaths concerning which more detailed information is available.

TABLE II  
Male and Female

	Male	Female	Male and Female
Under 1 Month.....	4	2	6
Under 1 Year.....	25	21	46
1 Year .....	6	5	11
2 Year .....	5	3	8
3 Years.....	4	2	6
4 Years.....	2	0	2
5-9 Years.....	0	4	4
10-14 Years.....	0	0	0
15-19 Years.....	0	0	0
20-29 Years.....	0	0	0
30-39 Years.....	1	1	2
40-49 Years.....	1	0	1
50-59 Years.....	1	0	1
60-69 Years.....	3	3	6
70-79 Years.....	4	11	15
80-89 Years.....	5	6	11
90 and Above.....	1	3	4
Totals .....	62	61	123

It will be noted that the total number of the 123 deaths are as equally divided as possible as regards sex. A striking fact is that nearly all of these deaths affected the extremes of life. Eighty-three of the fatalities, or 67 per cent, occurred in infants and children under ten years of age and 36, or 29 per cent, in the age groups of sixty years and over. Only four deaths occurred in the fifty year span from ten to sixty years of age. The youngest patient was a baby who died six days after birth, the oldest a woman ninety-eight years of age.

IV. Symptoms and Clinical Course of Illness.

In 119 of the 123 records, or 97 per cent, symptoms of diarrhea and enteritis were stated or implied. In 71, or 58 per cent of the instances, the stools contained blood and in 108 or 88 per cent, mucus. Nine records gave no information regarding the presence or absence of blood and in seven records the question as to the presence of mucus was not answered. Many of the records contain interesting remarks relative to symptomatology and course. To quote: "This child (age two years) developed severe gastro-enteritis with acute onset, severe toxicity and shock—dying in twenty-four hours from onset of symptoms." Typical of a number of the cases is the following statement: "Child (age six months) was almost dead when I was first called—saw child at 8:00 a. m. and it died in the hospital at 10:00 a. m."; or again: "Child (three years old) markedly malnourished—rapidly fulminating bowel infection." Similar remarks applied to the aged: "Mr. M. (age eighty-five years) was seized with a severe diarrhea. Within twenty-four hours he became badly dehydrated and weakened and his heart failed in spite of supportive measures."; or again: "Old lady (eighty-seven years old) very frail, died, apparently of exhaustion after three or four days of very acute enteritis. Common here this summer under name of 'intestinal flu'."

V. Duration of Illness.

The records indicate that in twenty of the 123 cases under consideration, illness terminated fatally within twenty-four hours after medical care was sought. Duration of illness of other cases in the group was as follows: Two days, ten cases; three days, thirteen cases; four days, eight cases; five days, six cases; six days, thirteen cases; one week, eighteen cases; within two weeks, twenty cases; within three weeks, four cases; four weeks, three cases; six weeks, three cases; and over six weeks, two cases. In 108, or 88 per cent of the 123 deaths, duration of fatal illness was within a period of two weeks.



## VI. Epidemiologic Factors.

## A. Urban and rural distribution.

Seventy-three, or 59 per cent of the deaths, were urban and 42, or 34 per cent, rural. The place of residence was not mentioned in eight, or seven per cent of the records.

## B. Water supply.

Well water was used in sixty-eight of the homes concerned, city water in forty-five homes and city and well water in four instances. Cistern water was mentioned once. In five cases, the kind of water was not stated.

## C. Milk Supply.

"Own cows" represented the source of milk in forty-five cases and dairies were mentioned in twenty-one instances. Excluding eleven homes in which infants who died had been breast fed, raw milk was used solely or in part in 63 per cent, and pasteurized, boiled or tinned milk in 37 per cent of the seventy-six homes for which data are at hand.

## D. Excreta disposal.

Privies served this purpose in 79, or 64 per cent of the 123 homes concerned. Disposal was by sewer or septic tank in 37, or 30 per cent of all instances. The type of disposal was not mentioned in seven, or six per cent of the records.

## E. Flies.

Prevalence of flies was not mentioned in fourteen of the records. Flies were said to be few in number in 62, or 50 per cent, and numerous in 47, or 38 per cent of the homes. In several records the number of flies was said to be "very many," "countless" and in one instance "terrible."

## F. Sanitary status.

This was good in 45, or 37 per cent, fair in 33, or 27 per cent and poor in 38, or 31 per cent of the homes for which this information was given. The remarks of one physician are of interest here. He states: "In a family with two or more infected it (the sanitary condition) was necessarily bad, — in larger families — cases were more ill, and less well managed — many cases were either reinfected or had recurrences after a week to two weeks."

## G. Meals during week prior to fatal illness.

In 92, or 75 per cent of the cases, all meals were at home; in 14, or 11 per cent, some of the food was obtained or prepared away from home. Sixteen, or 14 per cent, of the

records contained no information regarding this matter.

## H. Illness among others in household.

In at least 21 homes, illness of one or more of the other members of the family had preceded that of the fatal case. In two other homes, illness of others occurred at the same time and in eight homes, illness followed that of the fatal case. As an instance, in one home the father and two other children had symptoms of diarrhea and enteritis at the time of the birth of a child. The baby died of this condition six days later. In another home, a woman, eighty-two years of age, died of acute gastro-enteritis following similar illnesses affecting two others in the family.

## VII. Etiologic Factors.

Amebic dysentery, food infection, tuberculosis and bacillary dysentery merit serious consideration among etiologic factors in the deaths under consideration.

## A. Amebic dysentery.

Amebic dysentery was stated as the cause of death in only one of the 123 records. This death occurred in a child nine months of age, the illness being of an acute nature and microscopic work having been done in the laboratory of a substandard hospital. The possibility of amebic dysentery was suggested in a second case but no laboratory tests had been carried out. Since fatal outcome in 88 per cent of the 123 deaths occurred within two weeks after the onset of symptoms, it seems likely that only a few of these deaths may have resulted from amebic dysentery.

## B. Food infection.

Food infection due to "tainted" meat was mentioned as the chief causative factor in one instance.

## C. Bacillary dysentery.

This was the stated cause of five deaths in the series of records under consideration. Laboratory tests were made in connection with ten, or eight per cent, of the 123 fatal cases. Many of the patients had illnesses of the fulminating type and specimens were not obtained. During August of 1934, investigation of two outbreaks of diarrhea and enteritis was made by the State Department of Health. In one investigation (Wapello county), the cause of death in two persons, (above eighty years of age) was attributed to bacillary dysentery. In connection with the second investigation, in northwest Iowa

(Plymouth county), fecal specimens were forwarded to the State Hygienic Laboratories at Iowa City. From one of these specimens, *B. paradysenteriae*, "y" type, was isolated. A remark on one of the case records from Black Hawk county is significant. The physician states: "I was firmly convinced of an epidemic of bacillary dysentery."

#### CONCLUSIONS

1. Some data are presented relative to 123 out of 295 deaths which occurred in Iowa during the first nine months of 1934 and attributable to diarrhea, enteritis and dysentery.

2. In order to determine accurately the etiologic factors in deaths from enteric disease, it is essential that more laboratory examinations be made.

3. It is desirable that the reporting of cases of amebic and bacillary dysentery be as complete as possible.

4. Since factors in the transmission of infection in diarrhea, enteritis and dysentery are identical to those which operate in typhoid fever, the need for improvement in sanitary conditions, (excreta disposal, fly control, and home hygiene), including the safeguarding of water and public milk supplies, is apparent.

5. It is probable that a large percentage of diarrhea and enteritis deaths under and over two years of age are the result of bacillary dysentery.

#### PREVALENCE OF DISEASE

	Nov. '34	Oct. '34	Nov. '33	Most Cases Reported From
Diphtheria .....	51	69	81	Black Hawk, Polk
Scarlet Fever.....	285	217	358	Polk, Wright
Typhoid Fever.....	11	72	4	Boone, Linn
Smallpox .....	5	6	40	Audubon
Measles .....	905	102	11	Muscataine, Black Hawk
Whooping Cough...	51	34	71	Woodbury
Cerebrospinal .....				
Meningitis .....	2	5	4	Polk, Woodbury
Chickenpox .....	485	133	325	Woodbury, Black Hawk
Mumps .....	203	60	22	Dubuque
Poliomyelitis .....	5	7	4	Polk
Tuberculosis .....	25	66	29	(For State)
Undulant Fever....	18	21	10	(For State)
Syphilis .....	105	115	179	(For State)
Gonorrhea .....	182	173	183	(For State)

#### SCIENTIFIC EXHIBITS, AMERICAN MEDICAL ASSOCIATION

Application blanks are now available for space in the Scientific Exhibit at the Atlantic City session of the American Medical Association, June 10-14, 1935. The Committee on Scientific Exhibit requires that all applicants fill out the regular application form and requests that this be done as early as convenient. Applications close February 25, 1935. Persons desiring application blanks should address a request to the Director, Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago, Illinois.

#### FEDERAL FOOD LAW ENFORCEMENT

In a recent report of the Federal Food and Drug Administration to the Secretary of Agriculture it is reported that during the fiscal year the Administration collected and analyzed nearly 54,000 samples of foods and drugs. More than 29,000 of these samples were collected from importations. The Administration recommended nearly 1,100 criminal prosecutions and seized 1,729 shipments of adulterated or misbranded products. It also refused entry to 4,223 importations of foods and drugs. Nearly one-third of the time, money and effort of the Administration was devoted to the protection of the public from the danger of poisons from sprays used to combat insect pests and diseases of fruits and vegetables. This agency examined more than 6,000 samples of fruits and vegetables to detect poisonous chemicals, and as a result, seized fifty-eight consignments from interstate traffic.

#### AMERICAN CHILD HEALTH ASSOCIATION

Announcement is made by Dr. Samuel J. Crumbine, general executive of the American Child Health Association, of the Association's eighth health education conference, to be held in Iowa City, June 19 through June 22, 1935, at the invitation of the University of Iowa. The conference will be held in conjunction with the ninth annual Iowa Conference on Child development and Parent Education, which is scheduled for June 17 to 19, inclusive.

The American Child Health Association held its first health education conference in 1922. Since then, three have been held in New York and others in California, Massachusetts, Illinois and Michigan. These conferences, which attract a nation-wide attendance, are for the exchange of experiences and for free discussion of current problems in the field of health education. The Iowa Conference on Child Development and Parent Education is sponsored by the Iowa State Council for Child Study and Parent Education. The program is under the direction of the Iowa Child Welfare Research Station and the Extension Division of the State University of Iowa, cooperating with the Council, Iowa State College of Agriculture and Mechanic Arts, and Iowa State Teachers College. On June 19, with both conferences in session, the two programs will be arranged jointly.

This child development and parent education conference will be open to all who care to attend. Dr. George D. Stoddard, Director, Iowa Child Welfare Research Station, is arranging its program. The health education conference will be primarily a working conference, and for the working sessions attendance will be limited to about two hundred. Invitations to participate will be issued, as usual, by the American Child Health Association through its Director of Educational Service, Miss Anne Whitney. Further information concerning both conferences will be issued early in the spring.



# The JOURNAL of the Iowa State Medical Society

ISSUED MONTHLY

RALPH R. SIMMONS, Editor.....Des Moines

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No. 1

## SCIENCE ADVANCES PEDIATRICS IN 1934

In spite of the curtailment in research in many institutions due to the lack of funds for continuing chemical and biologic investigations, the year 1934 has produced many outstanding scientific discoveries which have advanced the practice of pediatrics. The most noteworthy progress, perhaps, has been in the fight against infantile paralysis which, during the year, has developed from two separate sources. The announcement of a vaccine thought to offer much, if not complete, protection against this disease, brings hope of preventive control of this serious ailment. While reports from the New York City Health Department and from Temple University would indicate that the vaccines are highly successful, the work has not advanced to the point where absolute or unequivocal statements are warranted.

Following the brilliant work in the isolation and synthesis of the scurvy preventing Vitamin C (ascorbic acid), researches with this substance have progressed with rapidity. Certain foreign laboratories have produced this substance on a commercial scale during the past year. Researches conducted at the University of Strasbourg seem to prove that the necessary Vitamin C is spontaneously produced in the body of infants up to the age of about five months. They believe that the amounts produced are sufficient for the infant's needs and that supplemental additions to the infant's diet may be omitted during this period.

From the laboratories of the Henry Phipps Institute in Philadelphia comes the report that the active substance in the tubercle bacillus, which is responsible for the tuberculin skin test, has been isolated and prepared as a pure chemical sub-

stance. This discovery is probably of great significance in advancing additional research into the cause and prevention of tuberculous lesions, as well as furthering our knowledge concerning the tuberculin reaction.

Investigations of a new ricket preventive substance found in cholesterilene sulfonic acid, by Professor Lester Yoder of the Iowa State College, was announced. This substance is closely related chemically to Vitamin D and possesses many of the protective qualities of this vitamin. The study brings the isolation and synthesis of Vitamin D closer to a reality.

Researches into the cause and prevention of mumps and certain of the exanthemata of childhood have been announced. None of these researches has progressed to the point where their general utilization is recommended.

Outstanding for the year in public interest has been the pediatric triumph of Dr. A. R. Dafoe in the successful rearing of the five Dionne babies. Although rating himself as "only a country doctor," his success with the now famous quintuplets would undoubtedly win for him by popular vote the title of America's Premier Pediatrician for 1934.

## IMPRESSIONS VERSUS FACTS

Our impression as we view the distant mountains on the western deserts is that the mountain lies only a few miles beyond. Hard facts may reveal the distance to be ten, fifteen or twenty miles. Impressions are beliefs and, as such may not lend themselves to proof. Their worth and accuracy should be measured by the yardstick of demonstrable facts.

In religion they may supplement faith. In business and finance they serve, at best, as unreliable guides for action. In science impressions are valueless except as they suggest avenues of investigation. Recognizing the soundness of facts and doubly appreciating the treacherous character of impressions, it would seem strange that physicians so often permit impressions to be substituted for facts.

We as physicians are prone to accept an impression concerning a physiologic or pathologic process heretofore unstudied, or to accept as meritorious an unproved drug. During the past few years, for example, papers concerning the action and interaction of the glands of internal secretions have frequently been published in which impressions are accepted as facts, and worthless or harmful therapy is recommended. Does the fact that Mrs.



Hypochondriac or Miss Neurasthenic, improved in symptoms and well-being upon the injection of a proprietary glandular substance, warrant the conclusion that a panacea has been found, or a physiologic or pathologic process has been proved? The same two mythical patients might have been cured by a purple ribbon tied around one of their toes, or sleeping with their heads toward the north.

The physician's daily mail bears ample evidence that we have earned a reputation for credulity which is far from complimentary. In their advertising material many drug manufacturers flagrantly abnegate science and flaunt impressions. Apparently they have reason to believe that the physician is no more critical than the layman and, on this basis, offer impressions expressed in testimonials in lieu of scientific proof. Testimonials are the ridicules of true science, and their insufficiency is a matter of common knowledge. The physician, nevertheless, is impressed by a statement quoted from Dr. So-and-So's letter or paper that "In my series of ten, twenty or fifty cases I have observed that red pills or blue pills are definitely beneficial or contraindicated."

Recently the detail man for a pharmaceutical manufacturer discussed with the writer a new intestinal antiseptic, lauding the merits of the preparation. The basis for his recommendation of the product was largely the verbal testimony of a number of physicians and patients who had voluntarily expressed belief in his product. I am convinced that he was not purposely misleading, but he insisted that the impression of these physicians constituted facts. Proof of a more substantial character was demanded, and my request was referred to his factory medical personnel. Aside from voluminous testimonials and a limited amount of experimental data collected from an inconclusive study on experimental animals, no other proof has been sent, but the factory's medical representative insists that the product is "thoroughly proved and worthy of trial." One might obtain the impression that the product was good, bad or indifferent from this experience. Only scientific facts will establish the true merits of this product.

In our appraisal of medical theory or claims, why not apply the yardstick of scientific measurement which has been drilled into each of us through a long course of medical training, rather than to permit ourselves to be guided along a fruitless path by impressions. Let us merit our claim as scientists. By following such a course, we may miss a few good things, but this lack will be more than offset by the serious blunders which we would otherwise commit.

## CONTRACEPTION

Following a court decision handed down in 1930 to the effect that sales of materials for birth control were legal unless the purveyor connived with retailers for the resale of the material illegally, medical and lay literature has blossomed forth with many reading notices, editorials and advertisements of devices, pamphlets and books on this subject, which had heretofore been distributed sub rosa. The contraceptive business had already reached large proportions commercially, but since this decision this industry has assumed the proportions of big business.

For these reasons, as well as the scientific interest shown in certain researches suggesting a safe and fertile period in the menstrual cycle, the so-called "natural way," the discussion of this problem in technical medical publications would appear timely. Unfortunately several court decisions and a public attitude have released to the reading public a large volume of pornographic, anthropologic, and frankly obscene literature which should not in any sense be confused with those publications setting forth the scientific aspects of sex and reproduction.

The observations of several birth control clinics in this country and in Europe are available to physicians and the laity through the Birth Control Clinic Research Bureau of New York and other similar organizations. The efficiency of various contraceptive devices and appliances has been carefully evaluated, and the work of these clinics has made possible the regional birth control clinic such as that recently established by a very representative group of citizens in Des Moines.

A second movement deals with the concurrent observations of Japanese and German gynecologists\* on the so-called fertile period in women. Predicated in the Mosaic laws and subject to biblical admonitions of fertility, these observations seem to establish a definite scientific relationship between the menstrual cycle and the period of ovulation. It is claimed that ovulation usually occurs from the twelfth to the sixteenth day before a menstrual cycle, and that for a period of five days prior to this time conception may take place. Shortly after ovulation occurs a brief period begins and continues to the same time in the next menstrual cycle. The exact periods have been worked out for both the unusual and the usual cycles, and charts have been devised for convenience in reckoning the fertile and safe periods.

We have no desire to enter into a discussion of

\* See book review section, this issue.

the moral or religious principles involved in any form of contraception. We are not prepared to discuss the legal phase. The public is receiving this information and the instruction in contraceptive means through clinics and printed matter, and it behooves the medical profession to be informed so that they may intelligently discuss matters of this nature with inquiring patients.

### HISTORY REPEATS ITSELF

Not so long ago the writer was advised by a member of the Society that in his opinion the JOURNAL devoted entirely too much space to the new theories in medical practice and too little space to a consideration of the "good old principles of practice." Questioning brought out the fact that those articles dealing with the vitamins, the glands of internal secretions, the newer concepts in the treatment of diabetes with insulin, the discussion of the bacteriophage, and all reference to the autonomic nervous system were particularly distressing to this reader.

I was reminded of an incident which occurred many years ago. As a second year medical student I returned to my home filled with enthusiasm to pursue my study of medicine during the summer vacation months, and was more than pleased when the opportunity for reading and study was offered by a well respected physician in the neighborhood, who, I was informed, had been president of his state medical society at one time. I reported very promptly to his office, and was given the key to the doctor's library. Imagine my surprise and disappointment when I discovered that the most recent textbook was dated twenty years before that time, and that his shelves were absolutely devoid of current medical literature. I timidly asked for current copies of the state and national journals. In substance, the doctor replied, "I haven't bought a medical book, nor have I subscribed to a medical journal for many years, since I became thoroughly disgusted with the attention which was being given the bacterial theory of disease." I was dumbfounded. I did not know that anyone doubted the bacterial theory, since to me it was gospel.

Apparently, however, brilliant minds of the past generation in senility suffered stagnation, just as brilliant minds today deteriorate when newness is accepted as *prima facie* evidence of incorrectness. A mind closed to progress is awesome, and its possessor more to be pitied than censured.

### CLAIMS FOR IRRADIATED EVAPORATED MILK

The committee on foods of the American Medical Association has accepted the following principal claims to be used in the promotion of irradiated evaporated milk.

1. The Vitamin D content of irradiated evaporated milk is increased by direct irradiation with ultraviolet rays (U. S. Patent 1680818 under license from the Wisconsin Alumni Research Foundation) making this a highly potent milk for infants and children, and for the special nourishment of bones and teeth by promoting a more efficient utilization of calcium and phosphorus.

2. The product is pure fresh cow's milk with approximately 60 per cent of the water removed by evaporation under reduced pressure. It is not a patented or proprietary food but a staple commodity.

3. It supplies all of the important food values of whole cow's milk, including those vitamins which milk can be depended upon to supply, plus an extra amount of Vitamin D created by irradiation.

4. Since this milk is sterile, it is the safest milk obtainable; it cannot introduce pathogenic microorganisms to induce diarrhea in infants.

5. Irradiated evaporated milk is more readily digested than raw milk or milk boiled only a very short time.

6. The casein curd of irradiated evaporated milk in the stomach is very fine and soft in texture and structure. It resembles in physical structure the curd of human milk.

7. Its homogenization produces a fine dispersion of the fat particles and renders them more readily acted upon by digestive enzymes and more thoroughly assimilated.

8. Many pediatricians consider irradiated evaporated milk to be the best form of cow's milk for preparing the baby's formula.

9. It is a most convenient and economical whole milk supply for family and community.

10. Milk treated in this manner is usually less allergic than raw milk or milk boiled only a short time.

11. The value of irradiated evaporated milk has been demonstrated in special diets for adults when a readily digestible form of milk is required.

12. Irradiated evaporated milk may be whipped. Because of the homogenization it produces a "buttery" flavor and a characteristic texture and consistency in foods in which it is used.

13. Because of its economy, nutritive value, and keeping qualities, irradiated evaporated milk has been found to be of special value in the family feeding programs of relief agencies.



## THE STATE PERSONAL INCOME TAX

The State Personal Income Tax, insofar as the average physician is concerned, contains only a few items, which are well to keep in mind in working out his state income tax for 1934. This return and remittance must be made to the Iowa State Board of Assessment and Review under whose department the collection of this tax was placed.

There are two types of returns; one for persons whose income is less than \$2,500.00 and one for those whose income is over \$2,500.00. These returns can be secured from the State Board of Assessment and Review, or from your local bank or county treasurer, and must be returned to the State Board of Assessment and Review prior to April 1, 1935, unless an extension of time is granted by the State Board.

Every resident of this state, if single, and with a net taxable income of \$600.00 or more, or if married, with a net taxable income of \$1,100.00 or more, is required to make these returns.

The taxpayer should first compute the amount of his gross income which should include gains, profits and income derived from salaries, wages or compensation for personal service of whatever kind or form, as well as income from interest, rent, dividends, securities, or the transaction of any business carried on for gain or profit, as well as any income derived from any source whatsoever, or in any form, either received or accrued.

However, the gross income should not include the profit from sale or exchange of real or personal property, amounts received from life insurance contracts upon maturity or endowment, or annuity insurance contracts, nor the value of property received by request, devise or descent, nor interest upon obligations of the United States or its possessions, nor amounts received through accident or health insurance, nor from stock dividends distributed by a corporation to its stockholders.

After the taxpayer has computed a gross income, he may then deduct all his ordinary and necessary expense, either paid or incurred during 1934 in carrying on his business, which expense

may include employees' salaries, rent, supplies, repairs, operating expense of automobile used in his profession, together with insurance premiums on property against fire, storm, theft, accident or similar losses. He may also deduct all interest paid or accrued in 1934 upon indebtedness, also all taxes paid during 1934, except inheritance, estate, (both federal and state) and income tax. He may also deduct or charge off all worthless credits which have been found worthless within the year 1934 if the amount has previously been included in gross income in a return under this act. The deductions

for worthless credits would not apply however, under the present law until the return was made in 1936 for the year 1935, as the law requires that these obligations must have been included as gross income in a previous return, and in view of the fact that this is the first return, it would be impossible to have

included any bad debts in a previous return.

There may also be deducted from the gross income a reasonable allowance for damage, destruction, depreciation and wear and tear on property used in the business, which allowance would depend upon the average life of the property and figuring the fair and reasonable value of it on January 1, 1934.

There may also be deducted from the gross income donations to the United States or any state or political subdivision thereof, or to any trust, community chest fund or foundation or to any organization of War Veterans or Auxiliary units thereof or to any fraternal society, if such contributions are to be used for religious or charitable educational purposes.

However, all of the deductions for donations from the gross income may not exceed 15 per cent of the taxpayer's net income.

The taxpayer may not deduct living or family expenses, permanent improvements or betterments to property, or any amounts expended in restoring property for which an allowance or depreciation or depletion is or has been made upon his return. Neither may he deduct for capital losses resulting from the sale or exchange of real or personal prop-

*This article has been prepared for the Journal by Mr. Gerald O. Blake, legal adviser for the Iowa State Medical Society, since the numerous requests for information which have been received in the central office would indicate that this situation requires clarification.*



erty or losses from stocks, bonds or other securities determined to be worthless and charged off during 1934.

After making all the proper deductions from the gross income the taxpayer then has his net income upon which he should figure his tax at the rate of:

1. On the first one thousand dollars of taxable income, or any part thereof, one per cent.
2. On the second one thousand dollars of taxable income, or any part thereof, two per cent.
3. On the third thousand dollars of taxable income, or any part thereof, three per cent.
4. On the fourth thousand dollars of taxable income, or any part thereof, four per cent.
5. On the fifth thousand dollars of taxable income, or any part thereof, five per cent, and on all taxable income in excess of five thousand dollars, five per cent.

From that computed tax he may deduct the following:

1. For a single individual, six dollars.
2. For husband and wife or head of a family, twelve dollars.
3. For each child under the age of twenty-one years who is actually supported by and dependent upon the taxpayer for his support, an additional two dollars.
4. For each actual dependent other than as specified in division 3 of this section, an additional two dollars.

It should be remembered that every individual who has an annual gross income of \$3,000.00 is required to file his return whether there is any tax payable or not. If the tax amounts to more than \$10.00 the same may be paid in two installments, each consisting of one-half the total amount, the first installment to be remitted with the return, and the second to be paid on or before six months after the date of filing the return.

As an example of the workings of this law, let us assume that a physician has during the year 1934 received \$5,000.00 in cash and has accounts receivable of \$2,000.00 and has received from other sources such as stocks and bonds or profit from the operation of a farm, the sum of \$3,000.00, making a total gross income of \$10,000.00. He may deduct from that, however, salary of his office girl or other employees, automobile expense, rent, supplies, repairs, depreciation of equipment and donations, the total amount of \$3,000.00, leaving a net income of \$7,000.00. Upon this he is required to pay one per cent on the first \$1,000, or \$10.00; two per cent upon the second \$1,000.00, or \$20.00; three per cent upon the third \$1,000.00 or \$30.00; four per cent upon the fourth \$1,000.00 or \$40.00; and five per cent on the balance of \$3,000.00 or

\$150.00, making a tax due of \$250.00. This physician, however, is married and has four children. As head of the family he may deduct \$12.00 and \$2.00 apiece for each child under twenty-one years of age, making a total of \$20.00, which he may deduct from the computed tax, leaving him to pay the sum of \$230.00.

#### THE COUNCIL BLUFFS PLAN OF IMMUNIZATION AGAINST DIPHTHERIA\*

In the past few years the diphtheria problem in Pottawattamie County has been of great importance from the standpoints of morbidity, mortality and economic loss. In Council Bluffs alone, a city of 42,000 there were from September 1, 1933, to September 1, 1934, 74 reported cases of diphtheria with eight deaths. Slightly more than 50 per cent of the cases were in the age group from five to thirteen years. Of the 74 reported cases 38 were in families receiving relief, and over 30 were in one school district, the residents of which were largely on relief. A study of the 1933 and 1934 epidemics, as of previous epidemics, shows that each started and remained limited for a few weeks to the above district. In analyzing the city from the school district standpoint, the percentage of theoretically immune individuals (although all of them had not been checked by the Schick test) ranged from 14 to 55 per cent, the low figure being obtained in the district already described, in which almost half the total cases appeared. Although the situation presented a fairly simple problem in epidemiology, it was not approached as such, nor was any effort made by county relief officials to eliminate the economic phase by immunization of county charges.

Periodically, the local medical society has been requested by parent-teacher associations to enter into a mass immunization campaign, the materials to be furnished by the State Board of Health and the doctors to donate their services, or at best to receive only a nominal stipend. Twice during the last ten years such programs have been entered into by individual physicians. Of these programs no accurate records can be found. No Schick tests were performed; the physicians were not recompensed; no responsibility was assumed by the parent-teacher associations, or the Board of Education. In other words, those physicians who participated in the campaign were assuming full liability for a program over which they had no control and from which they could receive little but further calls for gratuitous service.

The local society has consistently held itself aloof from these programs; but in the face of

\* This article has been prepared by the Committee on Immunization, Pottawattamie County Medical Society.

the problem of increasing diphtheria and the slow progress of voluntary immunization, the society felt that only a mass program could be of real worth, and presented the following plan to the school superintendent's office, where it was enthusiastically received. With the endorsement of the Board of Education it became a project of the school system.

*Program of Immunization Against Diphtheria in Council Bluffs.*

I. Non-medical participants

A. School system, providing:

1. Questionnaire to obtain listing of immune and non-immune individuals.
2. Circularization of parents to stimulate interest.
3. Permanent standardized record system.
4. Certificate of immunization for doctor's signature.
5. Representation on governing committee.

B. Any interested lay group (P. T. A., etc.) providing:

1. Meetings at which interest may be stimulated.
2. Transportation of children to doctors' offices when needed.
3. Contributions to indigent fund.
4. Representation on governing committee.

II. Medical participants providing:

- A. Free choice of physician to parents.
- B. Treatment in individual offices.
- C. Treatment consisting of one dose of alum precipitated toxoid obtained from local druggists by physician.
- D. Standard fee of \$3.00 with a minimum fee of \$1.50; reduction being made at physician's discretion.
- E. Signature of certificate of immunization for each child immunized. (Certificate carries suggestion that Schick test be done in six months, but this is optional and at the individual's expense.)

III. Governing committee made up of representatives from above groups, providing:

- A. Biweekly meetings for direction of program.
- B. Indigent fund obtained through solicitation of interested and charitable organizations.
  1. Physician's charges against fund approved.
  2. Checks drawn by committee treasurer against fund for payment of accepted charges.

IV. Publicity committee made up of representatives from above groups providing:

- A. Censoring of all publicity before presentation to laity.

B. Direction of publicity through:

1. Circularization of parents.
2. Newspaper comment.
3. Speeches.

Although the program was begun on May 1, 1934, little but organization was accomplished. This, however, was no small undertaking since in addition to the necessary statistical work and the choice and formation of predictably active committees, there was the task of diplomatically convincing the lay groups involved that the doctor was entitled to a reasonable fee for his service. It must be remarked at this point that there never was encountered any serious criticism or antagonism, even from the cults.

The total enrollment in Council Bluffs schools as of September, 1934, was 9,453. Of this number 2,078 represented the enrollment in the two high schools. The number of children in elementary schools (the group at which the campaign was directed) was 7,460. Of this number approximately 2,500 had received immunization by May 1, 1934. By December 1, 5,137 were so treated, making a total of 2,637 immunized under the present arrangement. Of this number 1,147 were treated at their own expense, the remaining 1,490 being fully or partially paid for by the central committee fund. An interesting phase of the program was the large number of preschool children whose immunization was stimulated. These figures are not yet available, but they will be large. As yet no definite program of Schick testing has been initiated. This, of course, represents an obligation to be fulfilled.

Analyzing these figures on the basis of schools, we are delighted to find that those schools which started with the lowest percentage of immunization are finishing with the highest. One school has risen from 14 to 67 per cent, another from 16 to 92 per cent, and a third from 23 to 94 per cent. The rating of one school has risen from 43 to 98 per cent. This is explained, of course, by the fact that funds have been made available for those unable to pay.

Certain phases of the program warrant discussion. The alum precipitated toxoid was chosen because of its simplicity, freedom from reaction, cheapness, and apparent superiority to the older materials. This material was furnished by the doctor, and purchased by him from the local retail druggist, thereby enabling the druggist to realize a legitimate profit. The cost of the program was borne by the community. All printing, and printed material was supplied by the school system, as was all clerical help. The central fund was raised by subscription from lay groups and individuals. In the administration of this fund it was held as a



principle that each individual should pay as much of the minimum fee as he could before he received any aid.

It is impossible to give enough credit to the lay groups and individuals who participated in this program. Our superintendent of schools took an aggressive and vital part, using his entire teaching organization in furthering the work. The Parent-Teacher Association and the School Nursing Staff acting in a liaison capacity were invaluable. The Woman's Auxiliary to the Pottawattamie County Medical Society assumed the burden of publicity and did a splendid piece of work. Financing of the central fund was made possible by the activities of altruistic individuals.

Aside from the unexpected success in the number of children immunized this program represents a striking achievement for the doctor. *Every child was immunized by the doctor of his parents' choice.* Every treatment was given in a *physician's office* and the physician was the *sole judge* of a patient's right to receive treatment at a reduced fee. The Pottawattamie County Medical Society believes that this is a concrete demonstration that the doctor need not carry the burden of such programs, but that with proper organization and just a little educational effort it is possible to put this responsibility directly where it belongs—upon the community.

#### DIRECTOR OF MEDICAL RELATIONS, THE BORDEN COMPANY

Mr. Louis J. Auerbacher, the first to suggest that the Vitamin D irradiation of milk might be an effective means of curbing infantile rickets, and the man who launched the successful experiments toward that end, in association with the late Dr. Alfred F. Hess, has been appointed Director of Medical Relations of The Borden Company. Mr. Auerbacher's duties will include contacting the medical profession regarding all phases of research on milk and milk products.

#### RESOLUTIONS FROM THE COMMITTEE ON MILITARY AFFAIRS

Whereas, there are definite destructive, communistic forces at work in our state educational institutions, tending to undermine our national defense policy, by eliminating compulsory military training from the curricula of the State University of Iowa at Iowa City, and the Iowa State College at Ames, and

Whereas, ROTC training has been withdrawn from the medical schools of this country as a measure of economy, thereby reducing the number of available medical department reserve officers, and

Whereas, the ROTC is the only source of reserve officers who would be required to train our citizen army in time of a major emergency,

Be it therefore resolved that the Iowa State Medical Society, through its Committee on Military

Affairs, go on record as opposed to the withdrawal of ROTC training from the medical schools, and urges its restoration, and

Be it further resolved that the Iowa State Medical Society, through its Committee on Military Affairs, go on record as opposed to the abolition of compulsory military training in our state institutions of higher education, and urges its retention as necessary for the functioning of our national defense policy, and

Be it further resolved that a copy of this resolution be sent to each state senator and state representative at Washington, and to each member of the Iowa Assembly, and that it be reproduced in the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY.

Thos. F. Suchomel, M.D., Chairman,  
Harold A. Spilman, M.D.,  
Arnold L. Jensen, M.D.,

Committee on Military Affairs of the Iowa  
State Medical Society.

#### SURGEONS TO MEET IN JACKSONVILLE, FLA.

The Southeastern Surgical Congress, through its secretary, Dr. B. T. Beasley, announces the sixth annual assembly of the Congress which will be held in Jacksonville, Florida, March 11, 12 and 13, 1935. The Congress has met previously in Atlanta, Birmingham and Nashville. The states composing the Congress are Alabama, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee and Virginia. A record attendance is anticipated at the Jacksonville meeting. Since March is the most desirable month to visit the land of flowers many surgeons will no doubt combine business and pleasure and attend during this season of the year. For further information address Dr. B. T. Beasley, Secretary-Treasurer, 1019 Doctors Building, Atlanta, Georgia.

#### AMERICAN ASSOCIATION FOR THE STUDY OF GOITER AGAIN OFFERS PRIZE

The American Association for the Study of Goiter again offers the Van Meter Prize Award of \$300 and two honorable mentions for the best essays on the subject of goiter. The essays should be based on original research work on the subject of goiter, preferably its basic cause. The prize essay or its abridgement is to be presented at the annual meeting of the Association to be held in Salt Lake City, Utah, in June, 1935. Competing manuscripts should be in the hands of the Corresponding Secretary, W. Blair Mosser, M.D., Kane, Pennsylvania, not later than April 1, 1935.

The first prize for the 1934 meeting was awarded to M. A. B. Brazier, Ph.D., B.Sc., London, England, for her essay "The Impedance Angle Test for Thyrotoxicosis." First honorable mention was awarded Professor Ugo Cerletti, Genoa, Italy, for his essay "Three Years of Experimental Research in the Etiology of Endemic Goitre." Second honorable mention was awarded D. Roy McCullagh, M.D., Cleveland Clinic, Cleveland, Ohio, for his essay "Studies in Blood Iodine, Using a New Chemical Method."



## SPEAKERS BUREAU ACTIVITIES

### COMMITTEE MEETING

The Speakers Bureau Committee met in Iowa City on Thursday, December 20, for the purpose of extending to the doctors of the university a dinner as a token of appreciation from the state society and the profession for the work they have done in putting on the postgraduate courses. Not all of the doctors who have helped with this work were able to be present, but about twenty-two assembled at the Iowa Memorial Union on that evening.

Dr. Felix Hennessy, as toastmaster, opened the program by paying a tribute to Dr. Clarence W. Baldrige, who had done so much in furthering the work of the profession throughout the state. He expressed the hope that a memorial to Dr. Baldrige might be started in the form of a scholarship for research work in medicine at the university. It seemed to be the consensus of opinion that this would be a most fitting type of memorial for Dr. Baldrige, in view of the fact that he had done so much research work for the medical profession himself.

The subject of the postgraduate courses was taken up in detail. The physicians throughout the state who have been enrolled in these courses have had their opportunity to make suggestions on the courses, and the men at the university were given an opportunity at this dinner to present their views. Their criticisms and questions brought up the same problems which had been mentioned by the practitioners. The question as to whether the lecturer should address himself to the specialist or to the general practitioner was discussed very thoroughly, as it is one which has been brought up in some centers. The question of whether the university men should furnish outlines of the lectures, or whether the members of the course should take notes, was gone into, as it also has been a point of discussion.

The doctors of the university faculty were very anxious to receive any and all comments on the courses. In order to plan better courses for the coming years, they need to know what the men throughout the state are receiving from the lectures as arranged, and what they want in the future. The Speakers Bureau Committee, representing the practitioners, was able to give them a better idea of the postgraduate work as a whole than they could gain individually through their contact with the men attending the lectures.

The result of the meeting was a better understanding of the problems of both groups, and this will undoubtedly bring about the planning of better courses in the years to come.

### MEETING OF MERIT FOR DECEMBER

Credit for the meeting of merit for December should go to the Dubuque County Medical Society for their meeting on December 18. Dr. A. J. Carlson of the University of Chicago was present to address the members of the postgraduate course on "New

Developments in Endocrinology," his lecture taking the place of the one which was to have been given by Dr. Baldrige. After his splendid address, dinner was served to a group of about one hundred and fifty people, composed of members of the course, nurses, dentists, druggists, and one veterinarian. Following the dinner, Dr. F. P. McNamara gave an excellent and most interesting talk on the Basic Science Law, beginning with the earliest days of medicine in the state, and tracing the methods of licensure up to the present time. Everyone present was most enthusiastic about the meeting, and it proved again that these inter-professional gatherings are of great value to all groups participating in them.

### GRINNELL HEALTH LECTURES

Beginning the middle of January, the Speakers Bureau is conducting a course of public health lectures in Grinnell, sponsored by the Grinnell Hospital Association. These lectures are being widely advertised and publicized in Grinnell, and should attract a very large audience.

This is the first time that we have arranged a course of lectures for lay audiences. We have planned courses for medical groups, and even for some of the schools in the state, but this is the first time we have scheduled a series of talks for lay audiences. If this first course goes over according to expectations, it will be followed by another course at Grinnell, and will undoubtedly be tried in other communities also.

The course is outlined as follows:

- January 16—"Infectious Diseases and Their Control," M. E. Barnes, M.D.
- January 23—"The Common Cold," Thomas U. McManus, M.D.
- January 30—"Infantile Paralysis," Arthur Steindler, M.D.
- February 6—"Accidents," D. N. Gibson, M.D.

### RADIO TALKS

WOI—Wednesdays, at 4 P. M.  
WSUI—Mondays, at 8 P. M.

- January 2-7—The Doctor and the Patient.  
T. F. Thornton, M.D.
- January 9-14—Cancer of the Breast.  
R. A. Fox, M.D.
- January 16-21—Rheumatism—Arthritis.  
B. F. Wolverton, M.D.
- January 23-28—Rheumatism—Acute Articular.  
R. N. Larimer, M.D.
- January 30-February 4—Imaginary Diseases.  
C. W. Mangun, M.D.
- February 6-11—Whooping Cough.  
G. E. Harrison, M.D.

# WOMAN'S AUXILIARY NEWS

*Edited by the Press and Publicity Committee*

MRS. OLIVER J. FAY, *Chairman*, 405 Thirty-seventh Street, Des Moines

## OUR TASK

From time to time your state officers receive news bulletins and messages from national headquarters. The following paragraphs are excerpts from a letter received from Mrs. Robert W. Tomlinson, president of the Woman's Auxiliary to the American Medical Association. The inspirational nature of these words seemed to warrant reproduction so that the entire membership could receive the benefit of their earnest appeal.

"One great bond we have in common, one ideal that we hold highest among our earthly ones—the bond, that of participating in the practice of the noblest of professions; the ideal, that of using our services wisely in the interest of that profession and mankind, and proving ourselves true helpmates, both individually and collectively. Collectively we are a strong force which may be of much use in a quiet way to the medical profession. We who know the unselfishness of these men of ours, can do much to enlighten a frequently misinformed public about the true character of medical work, and its plans for public health and welfare. We can, in a non-aggressive way, offset much of the wicked propaganda constantly kept before an ignorant and deluded populace.

"With this in mind, let us use our time wisely, make our plans carefully, and thank God for the opportunity to be of service to this profession of which we are an honored part."

Additional books to supplement the list started in last month's JOURNAL are:

11. *The Physician as a Man of Letters, Science and Action.* By Thomas Kirkpatrick Monro. Here you may read about Jenner, Garth, Darwin, Crabbe, Cowley and Dover; about the doctor who became a pope, and the one who became the Archbishop of Canterbury. Published in Glasgow, Jackson Wylie Company.

12. *The Romance of Leonardo da Vinci. The Random House of Mercjkowski.* One of the greatest figures in human history. He was a master of optical secrets, he was aware of the circulation of the blood, he had a cure for seasickness, to say nothing of his studies in anatomy. A great book about a great man.

13. *Nervous Breakdown—Its Cause and Cure.* By W. Beran Wolfe. He says that this condition is really a "psychological knockout." Published by Farrar and Rinehart, New York City.

14. *Your Long Suffering Stomach.* By Arthur F. Kraetzer, M.D. All about health food rackets, reducing fakes, etc. Published by Robert M. McBride, New York City.

15. *Our Movie Made Children.* By Henry James Forman. This book contains a most discerning evaluation of this great force for good and evil in our national life.

## READING LIST

The following articles have been recommended for your attention by Mrs. Robert E. Fitzgerald, chairman of the national press and publicity committee: The Philosophy of the Medical Fee—

H. C. Macatee, M.D., in *Medical Annals of the District of Columbia*, September, 1934.

The Influence of the Doctor on Legislation—

Editorial in the *Journal of the South Carolina Medical Association*, July, 1934.

The Clubwoman Looks at Animal Experimentation—Gertrude H. Campbell in *Hygeia*, August, 1934.

Report of National Meeting—

Mrs. Philip Schuyler Doane in *California and Western Medicine*, September, 1934.

## Pottawattamie County

Mrs. S. D. Maiden was elected president of the Woman's Auxiliary to the Pottawattamie County Medical Society at a luncheon meeting held at the Hotel Chieftain in Council Bluffs, Monday, December 10. Other new officers are: Mrs. H. B. Moorehead, of Underwood, vice president; Mrs. Robert Moth of Council Bluffs, secretary; and Mrs. F. Earl Bellingier of Council Bluffs, treasurer. Following the luncheon, Mrs. E. L. Hawkins read a paper on the modern treatment of tuberculosis and the part Christmas health seals play in carrying on the campaign against the disease.



## SOCIETY PROCEEDINGS

### Adams County Annual Meeting

The Adams County Medical Society held its annual meeting in Corning, Tuesday, December 11, and elected the following officers for 1935: Dr. O. B. Hawley of Corning, president; Dr. A. W. Brunk of Prescott, vice president; Dr. J. H. Wallahan of Corning, secretary and treasurer; and Dr. Frederick Binder of Corning, delegate.

### Black Hawk County

Donald J. Wilson, M.D., of Omaha, will speak to members of the Black Hawk County Medical Society, Tuesday, January 15, on the subject, Diagnosis and Treatment of Oral Lesions. New officers who will be inducted at the meeting are: Dr. A. A. Hoffman, president; Dr. W. O. Preece, vice president; Dr. F. Harold Entz, secretary; and Dr. George C. Murphy, treasurer.

### Bremer County Annual Meeting

The annual banquet and election of officers of the Bremer County Medical Society was held at St. Joseph's Mercy Hospital in Waverly, Thursday, December 13. Thirty-five guests and members were present at the turkey dinner served by the Sisters of Mercy. The scientific program consisted of an illustrated lecture on Some Problems in X-ray Diagnosis by Nelson L. Hersey, M.D., of Independence, and an address on The Effect of Maternal Physical Development on Labor, by Paul J. Amlie, M.D., of Tripoli. The following officers were elected for the ensuing year: Dr. James E. Whitmire of Waverly, president; Dr. L. D. Jay of Waverly, vice president; Dr. F. R. Sparks of Waverly, secretary and treasurer; Dr. L. C. Kern of Waverly, delegate; and Dr. Sparks, alternate delegate.

James E. Whitmire, M.D., Secretary.

### Buena Vista County Annual Meeting

Dr. A. B. Carstensen of Linn Grove was named president of the Buena Vista County Medical Society, at a meeting held in Storm Lake, December 4. Other officers elected are: Dr. W. C. Porath of Storm Lake, vice president; Dr. T. R. Campbell of Sioux Rapids, secretary and treasurer; Dr. Max A. Armstrong of Newell, delegate; and Dr. H. E. Farnsworth of Storm Lake, alternate delegate.

J. H. O'Donoghue, M.D., Secretary.

### Calhoun County Annual Meeting

Members of the Calhoun County Medical Society met in Rockwell City, Tuesday, December 18, in conjunction with the dentists, pharmacists, veterinarians and nurses of the county, to perfect an inter-professional organization. Dr. W. W. Bowen of Fort Dodge presented an interesting paper on The Basic

Science Law, which was fully discussed by those present. Dr. F. W. Hobart of Lake City, was named president of the group, which plans to meet again in the near future.

Following this meeting, members of the medical society elected the following officers to serve during the current year: Dr. R. G. Henrichs of Manson, president; Dr. C. T. Farlow of Farnhamville, vice president; Dr. F. W. Hobart of Lake City, secretary and treasurer; Dr. D. J. Townsend of Lohrville, delegate; and Dr. P. W. Van Metre of Rockwell City, alternate delegate. Preceding the meeting, Dr. L. E. Eslick of Rockwell City served a Dutch Lunch to all those present.

W. W. Stevenson, M.D., Secretary.

### Carroll County Annual Meeting

The Carroll County Medical Society held a six-thirty dinner meeting, Thursday, December 13, at St. Anthony's Hospital in Carroll. The following officers were elected for the present year: Dr. O. P. Morganthaler of Templeton, president; Dr. A. F. Smith of Manning, vice president; and Dr. Roland Morrison of Carroll, secretary and treasurer. The committee on the indigent fee bill for the county, after studying the matter carefully, has decided to recommend that the society be in favor of accepting 50 per cent of the state fee bill as published in the Journal some time ago, and was instructed to meet with the Board of Supervisors and present this fee bill to them.

W. A. Anneberg, M.D., Secretary.

### Cass County Annual Meeting

Officers elected at the meeting of the Cass County Medical Society, which was held in Atlantic, Thursday, December 6 are: Dr. W. W. Kitson of Atlantic, president; Dr. E. E. Morton of Anita, vice president; Dr. R. L. Barnett of Atlantic, secretary and treasurer; Dr. Kitson, delegate; and Dr. Barnett, alternate delegate.

### Cerro Gordo County Annual Meeting

Dr. C. M. Franchere was named president of the Cerro Gordo County Medical Society at the annual election of officers held in Mason City, Tuesday, December 11. Other officers include: Dr. H. D. Fallows, vice president; Dr. Harold Morgan, secretary; and Dr. W. C. Egloff, treasurer.

### Cherokee County Annual Meeting

Recently elected officers of the Cherokee County Medical Society, as announced by Dr. G. Dean Tipton, retiring secretary are: Dr. J. H. Merrick, president; Dr. Tipton, vice president; Dr. R. P. Noble, secretary and treasurer; and Dr. L. P. Ristine, delegate.

### Clinton County Annual Meeting

Following a delicious turkey dinner at the Lafayette Hotel in Clinton on the evening of Thursday, December 6, the members of the Clinton County Medical Society held their annual election of officers, which resulted in Dr. Ralph F. Luse being re-elected president for the ensuing year. Other officers are: Dr. Morris Scanlon of DeWitt, vice president; Dr. Ross C. King, secretary and treasurer; Dr. R. T. Leneghan, delegate; and Dr. H. A. Amesbury, alternate delegate.

E. V. Donlan, M.D., Secretary.

### Delaware County Annual Meeting

The Delaware County Medical Society held its annual meeting in Manchester recently, and elected Dr. E. J. Wintenberg of Delhi president for this year; Dr. C. B. Rogers of Earlville, secretary and treasurer; Dr. J. I. Jones of Manchester, delegate; and Dr. Rogers, alternate delegate.

### Dubuque County Annual Meeting

Officers elected at the annual meeting of the Dubuque County Medical Society held in Dubuque, Tuesday, December 18, are: Dr. F. P. McNamara, president; Dr. W. E. Costello, first vice president; Dr. E. F. Mueller, second vice president; Dr. D. F. Ward, secretary; Dr. F. W. Meyers, treasurer; Dr. L. H. Fritz, delegate; and Dr. Donald C. Conzett, alternate delegate.

### Franklin County Annual Meeting

Present officers of the Franklin County Medical Society were unanimously re-elected to serve that organization during 1935, at the annual meeting held in Hampton, Wednesday, December 12. They are: Dr. W. R. Arthur of Hampton, president; Dr. F. H. Rodemeyer of Sheffield, vice president; and Dr. J. M. Burger of Hampton, secretary and treasurer.

### Hardin County Annual Meeting

Dr. F. N. Cole of Iowa Falls was elected president of the Hardin County Medical Society at the annual meeting held in Eldora, Tuesday, November 27. Other officers are: Dr. A. W. Burgess of Iowa Falls, vice president; and Dr. W. E. Marsh of Eldora, secretary.

Tuesday, December 18, W. E. Sanders, M.D., of Des Moines, furnished the scientific program for the society, reading a paper on Abdominal Cancer.

### Iowa County Annual Meeting

The Iowa County Medical Society held a dinner meeting in Marengo, Thursday, December 6, and elected the following officers to serve during 1935: Dr. E. L. Hollis of Marengo, president; Dr. C. F. Watts of Williamsburg, vice president; Dr. I. J. Sinn of Williamsburg, secretary and treasurer; Dr. Watts, delegate; and Dr. Henry Moershel of Homestead, alternate delegate. The scientific program consisted of two papers; Thomas D. Clark, M.D., of Victor,

presented a case report of a perforated gastric ulcer, and William E. Brown, M.D., of Cedar Rapids, who was a guest of the society, spoke on Toxemias of Pregnancy.

### Jasper County Annual Meeting

Officers elected at the annual meeting of the Jasper County Medical Society held in Newton, Tuesday, December 4, include: Dr. James C. Hill of Newton, president; Dr. H. H. Ennis of Baxter, vice president; and Dr. Thomas D. Wright of Newton, secretary and treasurer.

### Johnson County Annual Meeting

The Johnson County Medical Society held its annual meeting at the Oakdale Sanatorium, Wednesday, December 5. The following officers were elected for 1935: Dr. P. C. Jeans, president; Dr. J. D. Boyd, vice president; Dr. H. M. Korn, secretary and treasurer; Dr. George C. Albright and Dr. E. M. MacEwen, delegates; and Dr. M. E. Barnes and Dr. E. D. Plass, alternate delegates. A special committee, composed of Drs. John T. McClintock, Frank J. Rohner, Dean M. Lierle, and Frank R. Peterson, presented a memorial tribute to the late Dr. C. W. Baldrige. Howard L. Beye, M.D., professor of surgery at the University of Iowa, addressed the society on The Surgical Treatment of Pulmonary Tuberculosis.

H. M. Korn, M.D., Secretary.

### Marion County Annual Meeting

The sixty-second annual meeting of the Marion County Medical Society was held in Knoxville, Wednesday, December 12, following a delicious turkey dinner, at which the wives of the members were guests. After the dinner the physicians retired for their business session. Dr. F. M. Roberts paid a very fitting tribute to the memory of our oldest member, Dr. S. W. Thomas, who passed away last March; Dr. C. S. Cornell gave the annual secretary and treasurer's report, which was in the nature of a "swan song"; and Dr. E. C. McClure, presented the delegate's report of the 1934 annual state meeting. The last number on the program was the traditional President's Address delivered by Dr. E. P. Bell. The annual election of officers resulted as follows: Dr. H. C. Payne of Pella, president; Dr. Gail McClure of Bussey, vice president; Dr. E. C. McClure of Bussey, secretary and treasurer; Dr. H. L. Bridgeman of Knoxville, delegate; and Dr. F. M. Roberts of Knoxville, alternate delegate.

C. S. Cornell, M.D., Secretary.

### Marshall County Annual Meeting

H. W. Rathe, M.D., of Waverly, was the scientific speaker at the meeting of the Marshall County Medical Society held in Marshalltown, Thursday, December 6. Dr. Rathe spoke on The Modern Treatment of Pneumonia. Officers elected at the business session of the society are: Dr. B. L. Trey of Marshalltown, president; Dr. E. M. Barnes of Gilman, vice



president; Dr. M. G. Meyer of Marshalltown, secretary and treasurer; and Dr. A. D. Woods of State Center, delegate.

#### Mills County Annual Meeting

The annual business meeting of the Mills County Medical Society was held in Glenwood, Thursday, December 6. The program consisted of: Health Conditions in Malvern, M. S. Campbell, M.D., of Malvern; Complicated Health Conditions in Glenwood, George M. Agen, M.D., of Glenwood; and Meningitis, James C. Soderstrom, M.D., of Malvern. Drs. C. C. Madsen of Emerson, T. E. Shonka of Malvern, and James C. Soderstrom of Malvern, were voted into membership in the society. The election of officers for 1935 resulted as follows: Dr. Dean W. Harman of Glenwood, president; Dr. Ward A. DeYoung of Glenwood, vice president; Dr. J. M. Donelan of Glenwood, secretary and treasurer; Dr. Harman, delegate; and Dr. I. U. Parsons of Malvern, alternate delegate.

J. M. Donelan, M.D., Secretary.

#### Muscatine County Annual Meeting

Dr. C. P. Phillips of Muscatine was chosen president of the Muscatine County Medical Society at the annual meeting held in Muscatine, Tuesday, December 18. Other officers are: Dr. H. P. Mason of Wilton, vice president; Dr. R. M. Arey, of Muscatine, secretary and treasurer; Dr. L. C. Howe of Muscatine, delegate; and Dr. G. A. Sywassink of Muscatine, alternate delegate.

#### Page County Annual Meeting

Three Creston physicians furnished the scientific program for the Page County Medical Society at its annual meeting held in Shenandoah, Wednesday, December 5. The essayists and their subjects were as follows: Principles of Infant Feeding, A. F. Watts, M.D.; Diagnosis of Acute Mastoiditis, C. E. Sampson, M.D.; and Neutrophilic Lobe Counts, John C. Parsons, M.D. Officers elected at the business session are: Dr. R. D. Smith of Clarinda, president; Dr. F. H. Clark of Clarinda, secretary and treasurer; Dr. R. J. Mathews of Clarinda, delegate; and Dr. J. F. Aldrich of Shenandoah, alternate delegate.

#### Pottawattamie County Annual Meeting

The following officers were elected by the Pottawattamie County Medical Society at a meeting held in Council Bluffs, Thursday, December 13: Dr. S. D. Maiden, president; Dr. K. L. Thompson of Oakland, vice president; Dr. Arnold L. Jensen, secretary and treasurer; Dr. F. Earl Bellinger, delegate; and Dr. Gerald V. Caughlan, alternate delegate.

Arnold L. Jensen, M.D., Secretary.

#### Poweshiek County Annual Meeting

The annual meeting of the Poweshiek County Medical Society was held in Grinnell, Tuesday, December 18. Joseph B. Priestley, M.D., of Des Moines, presented an illustrated lecture on Urography. The

election of officers resulted as follows: Dr. S. D. Porter of Grinnell, president; Dr. E. S. Korfmacher of Grinnell, vice president; Dr. C. V. Lawton of Grinnell, secretary; Dr. J. T. Padgham of Grinnell, treasurer; Dr. E. B. Williams of Montezuma, delegate; and Dr. C. D. Busby of Brooklyn, alternate delegate.

#### Ringgold County

A regular meeting of the Ringgold County Medical Society was held Wednesday, December 12, in Mt. Ayr. Three physicians from Page County furnished the following scientific program: Hematoporphyria, illustrated with lantern slides, Charles Oberman, M.D., of Clarinda; Anesthesia, J. F. Aldrich, M.D., of Shenandoah; and Nephritic Retinitis, Wayland H. Maloy, M.D., of Shenandoah.

#### Sac County Annual Meeting

The Sac County Medical Society met in joint session with the Sac County Dental Society for dinner and a business session on Tuesday, December 18. An excellent attendance was registered on the part of both organizations, and the discussions were very helpful. Approval was given to the Basic Science Law, and its enactment was recommended. John Selby of Odebolt, representative-elect from Sac County, was a guest of the societies. The annual election of officers was held with the following results: Dr. George W. Anderson of Early, president; Dr. J. R. Dewey of Schaller, secretary and treasurer; Dr. Dewey, delegate; and Dr. L. B. Amick of Sac City, alternate delegate.

J. R. Dewey, M.D., Secretary.

#### Scott County

On Tuesday, December 4, the Scott County Medical Society entertained A. F. Lash, M.D., assistant professor of obstetrics and gynecology at the University of Illinois, College of Medicine. Dr. Lash spoke on Puerperal Sepsis.

#### Shelby County Annual Meeting

The Shelby County Medical Society held a dinner meeting at the Hotel Davis in Harlan, Monday December 3. Following the business meeting several reels of medical and surgical moving pictures were shown by Dr. J. P. McGowan of Harlan. The following officers were elected to serve during 1935: Dr. T. A. Kempf of Panama, president; Dr. A. L. Nielson of Harlan, secretary and treasurer; and Dr. E. A. Moore of Harlan, delegate.

A. L. Nielson, M.D., Secretary.

#### Sioux County Annual Meeting

Officers elected at the dinner meeting of the Sioux County Medical Society held in Orange City, Monday, December 10, are as follows: Dr. F. F. Null of Hawarden, president; Dr. M. O. Larson of Alton, vice president; and Dr. F. C. Bendixen of Ireton, secretary and treasurer. At 8:00 p. m. a meeting was held with the Board of Supervisors, at which time a new fee bill for the care of the county indi-

gents was arranged for at an increase over last years' contract.

F. C. Bendixen, M.D., Secretary.

#### Story County Annual Meeting

Dr. George J. Severson of Slater was named president of the Story County Medical Society at the annual election held recently in Ames. Other officers are: Dr. L. F. Richardson of Collins, vice president; Dr. W. B. Sperow of Nevada, secretary and treasurer; Dr. Bush Houston of Nevada, delegate; and Dr. A. I. Haugen of Ames, alternate delegate.

#### Tama County Annual Meeting

Dr. B. F. McNeil of Clutier was re-elected president of the Tama County Medical Society at a meeting of that organization held in Traer, Friday, December 14. Other officers are: Dr. G. T. McDowall of Gladbrook, vice president; Dr. A. J. Wentzien of Gladbrook, secretary and treasurer; and Dr. McNeil, delegate.

#### Van Buren County Annual Meeting

Newly elected officers of the Van Buren County Medical Society include: Dr. L. A. Coffin of Farmington, president; Dr. A. W. Woods of Birmingham, vice president; and Dr. C. N. Stephenson of Milton, secretary and treasurer.

#### Wapello County Annual Meeting

Dr. Evon Walker of Ottumwa, who has served the Wapello County Medical Society as its secretary for the past two years, was honored by that society by being named president at the annual election held in Ottumwa, Tuesday, December 20. Other officers are: Dr. J. E. Traister of Eddyville, vice president; Dr. D. O. Bovenmyer of Ottumwa, secretary and treasurer; Dr. E. B. Howell of Ottumwa, delegate; and Dr. W. C. Newell of Ottumwa, alternate delegate.

R. A. Fenton, D.D.S., of Iowa City, spoke on Symptomatic Mouth Lesions, at a joint dinner meeting of Wapello County physicians and dentists, Tuesday, December 4. Ralph J. Selman, M.D., of Blakesburg, addressed the final meeting of the society, held Tuesday, December 18, on The Pneumonias.

#### Washington County Annual Meeting

After a six-thirty dinner, Wednesday, December 12, the Washington County Medical Society elected officers for 1935 as follows: Dr. W. L. Alcorn of Washington, president; Dr. S. C. Ware of Kalona, vice president; Dr. W. S. Kyle of Washington, secretary and treasurer; Dr. Alcorn, delegate; and Dr. E. E. Stutsman of Washington, alternate delegate.

#### Winneshiek County Annual Meeting

Officers who will head the Winneshiek County Medical Society for 1935 are: Dr. Tom Egan of Ridgeway, president; Dr. J. J. Daly of Decorah, vice president; Dr. E. F. Hagen of Decorah, secretary and treasurer; and Dr. L. E. Larson, delegate.

#### Wright County Annual Meeting

The annual business meeting of the Wright County Medical Society was held in Clarion, Tuesday, December 11, and election of officers resulted as follows: Dr. J. H. Sams of Clarion, president; Dr. L. D. McNaughton of Eagle Grove, vice president; and Dr. J. R. Christensen of Eagle Grove, secretary and treasurer.

#### Upper Des Moines Medical Society

The winter meeting of the Upper Des Moines Medical Society was held at the Tangney Hotel in Spencer, Monday, December 10. A six o'clock dinner was served after which the following program was presented: Differential Diagnosis of Intrathoracic Tumors, with a report of three cases, E. E. Munger, M.D., of Spencer; Clinical Recognition of Acute Coronary Thrombosis, Peter P. Fransco, M.D., of Ruthven; Bright's Disease, Ruth Walcott, M.D., of Spirit Lake; and Mechanics of Anesthesia, E. E. Lashbrook, M.D., of Estherville.

### INTERESTING NEWS

#### In Brief

Vitamin C has been produced in powder form on a commercial scale by a German firm.

The amniotic fluid from cattle has been successfully used by Boston physicians to control peritonitis.

Success has been reported in the treatment of involuntal melancholia by the use of the sex hormone theelin.

The blood clotting properties observed in fresh or dried human milk have not been found present in the milk of other animals.

A chemical substance found in the urine of pregnant women has been shown to increase the rapidity of cancer growth in mice tenfold.

The venom of an India snake, *Vipera russellii*, has been used successfully as a hemostatic following operations with both normal and hemophilic patients.

### PERSONAL MENTION

Dr. Thomas A. Burcham of Des Moines, was named president elect of the Radiological Society of North America at its national convention held in Memphis, Tennessee, December 5, 6 and 7.

Dr. and Mrs. C. A. Boice of Washington, held open house, Monday, January 1, honoring Dr. and Mrs. J. C. Boice on their sixty-fifth wedding anniversary.

Dr. L. D. Rider, formerly of Estherville, has associated himself with Dr. A. H. Schooley of Terril.



Dr. McM. Hanchett of Council Bluffs, read a paper on "Gas Bacillus Infection" before the Western Surgical Association, at the annual meeting of that organization held in St. Louis, December 5, 6 and 7.

Dr. George H. Clark of Oskaloosa, spoke before the general meeting of the Fairfield Woman's Club, December 12, on "Allergy of Food Contact Sensitivity."

Dr. C. Dean Dowling of Cincinnati, Ohio, has located in Manchester for the practice of medicine.

Dr. William J. Byles of Perry Point, Maryland, arrived recently in Knoxville, to fill the vacancy at the Veterans' Hospital which occurred when Dr. M. H. Goldman was transferred to New York City.

Dr. George C. Albright of Iowa City, addressed the Iowa City Council of Parents and Teachers, December 18, on the subject, "Examination of the Eyes, and the Fitting of Glasses".

Dr. Gerald V. Caughlan was recently elected president of the Iowa Urological Society.

Dr. A. P. Johnson, who has practiced medicine in Sigourney for forty-four years, is leaving for Claremont, California, where he will establish his home.

Dr. W. B. Armstrong of Ames, spoke before the local Kiwanis Club, November 30, on The Health Program in the Ames Public Schools.

Dr. H. McK. Bunch, for ten years an associate of Dr. E. J. Gottsch in Shenandoah, has left for New York City, where he will take a three months' post-graduate course in surgery at the Polyclinic Post-graduate School and Hospital.

Dr. F. W. Dean of Council Bluffs, was elected president of the Iowa Academy of Ophthalmology and Otolaryngology at the meeting held in Iowa City, November 23.

Dr. F. G. Vernon, formerly of Merrill, has located in Sioux City. Dr. Vernon has practiced medicine in Merrill for twenty-seven years.

Five Council Bluffs physicians were guest speakers for the Sloan Clinic, at Bloomington, Illinois, December 7. The essayists and their subjects were: Coronary Disease, A. A. Johnson, M.D.; Management of Intestinal Obstruction, M. E. O'Keefe, M.D.; Hysterosalpingography, C. A. Hill, M.D.; Sarcoid of Boeck, G. R. McCutchan, M.D.; and Doctors as We Meet Them, Mathew A. Tinley, M.D.

## MARRIAGES

The wedding of Dr. Edna K. Sexsmith and Dr. J. A. Harper, both of Greenfield, took place December 12 at the home of the bride's sister. Both Dr. and Mrs. Harper have been practicing in Greenfield for some time, and will continue to make their home in that place.

Miss Blanche States of Coon Rapids and Dr. F. W. Hobart of Lake City were united in marriage, December 6, at the Catholic Church in Rockwell City. Dr. Hobart has been connected with the McVay Hospital for the past five years.

On Thursday, November 29, Miss Esther Isvik of Jewell and Dr. Robert C. Crumpton of Webster City, were married at the English Lutheran Church in Webster City. After a wedding trip through the southern states, Dr. and Mrs. Crumpton will return to Webster City, where Dr. Crumpton has been practicing medicine almost twenty years.

## DEATH NOTICES

Bendixen, Peter Alfred, of Davenport, aged fifty-two, died suddenly on November 30, as the result of heart disease. He was graduated in 1905 from Rush Medical College, and at the time of his death was a member of the Scott County Medical Society.

Herrick, William Joseph, of Ottumwa, aged sixty-eight, died December 12, following a prolonged illness. He was graduated in 1895 from Keokuk Medical College, and at the time of his death was a member of the Wapello County Medical Society.

McCarthy, Wilton W., formerly of Des Moines, died at his home in Annapolis, Maryland, December 13, at the age of sixty-two, as the result of a heart ailment. He was graduated in 1894 from Drake University College of Medicine, and had long been a member of the Polk County Medical Society.

Smythe, William R., of Morning Sun, aged sixty-eight, died December 21, as the result of heart disease. He was graduated in 1896 from Keokuk Medical College and had long been a member of the Louisa County Medical Society.

Wickham, Emmet Terry, of Waterloo, aged sixty-seven, died December 6, of coronary disease. He was graduated in 1888 from the State University of Iowa College of Medicine, and in 1891 from the Bellevue Hospital Medical College in New York City. At the time of his death, Dr. Wickham was a life member of the Washington County and Iowa State Medical Societies.

Young, Henry Byrd, of Burlington, aged eighty-three, died December 10, following a brief illness. He was graduated in 1875 from Northwestern University Medical School, and at the time of his death was a member of the Des Moines County Medical Society.

# HISTORY OF MEDICINE IN IOWA

*Edited by the Historical Committee*

\*DR. HENRY B. YOUNG, Burlington  
DR. FRANK M. FULLER, Keokuk  
DR. JOHN T. MCCLINTOCK, Iowa City

\* Deceased

DR. TOM. B. THROCKMORTON, Des Moines  
DR. WALTER L. BIERRING, Des Moines  
DR. WILLIAM JEPSON, Sioux City

## A History of Medicine in Jefferson County, Iowa

JAMES FREDERIC CLARKE, M.D., F.A.C.S., Fairfield

(Continued from last month)

Of the more than two hundred doctors with whom we are concerned very few were criminals; condemned even by their fellows if not by the courts. Nearly all were honorable men and women; good and useful citizens in their communities, making mistakes, of course, but not of the heart. Of all the doctors who have lived in Jefferson County only one has gone to the state's prison for crime. The members of the profession know that if justice prevailed a few more doctors would have been in restraint, but only a few; these few have not been punished because legal evidence concerning the crimes of physicians is extremely hard to produce.

### FINANCIAL CONDITIONS

We are often told that the pioneer doctors were "careless of fees." This is possibly one contrast with the doctors in Iowa today. It seems that in common with many other classes of the American people, doctors of medicine have in large numbers become commercially minded. Possibly this is because the profession has become overcrowded and must struggle for material existence. Possibly it is reaction against wrongful carelessness of the pioneer members of the profession, who were in this matter unjust to themselves. We learn from Dr. Shaffer's diary that the attitude of the laity toward paying doctors' bills is no different today than it was eighty years ago. Such a habit probably has as its chief cause the "carelessness of fees" of the pioneer doctors. Today boards of supervisors, who expend the public poor funds, pay attorneys and grocers their bills in full but expect and require physicians to cut their fees for indigent care to at least one-half.

Dr. Shaffer writes in March, 1854, "James Til-

son offers me \$5.00 on his account cashing it in full for \$7.50—would not touch it—told him I could not think of it." Does this seem hard hearted? But note this kindheartedness in November, 1854. "Mrs. D. paid \$20.00 on a bill of \$106.75 and I gave her a clear receipt."

Illustrative of financial conditions of those early days may we quote from a letter written to his Ohio home by Dr. Charles Shipman Clarke<sup>29</sup> on December 10, 1843: "A new country is not so completely perfect as many have imagined. As age gives experience and wisdom so it will take time and toil to make this country equal to Ohio. There are two groceries and one drug store; four regular old school physicians, two steamers, one rootist and one compound of steam and roots, besides every other man and every other woman in town professes to know what ought and what ought not to be done for the sick. The mass of this community are moral and intelligent. I settled in this town four months ago. In that time I have charges on my books of about \$500.00. I have not taken in money enough to pay for one-fourth of my medicines which cannot be bought for trade. I have really groaned and sweat for a little money. I feel well satisfied with the amount of custom and business done. I have been fortunate and successful. There has been more sickness than is usual the past season in this section. The cause is mainly attributed to the large immigration and to want and exposure. If the people here had plenty, with comfortable dwellings, they would be as sure of good health as in older countries. An observer and judge of cause and effect would not think it strange if sickness prevailed in floorless open log cabins. The practice of medicine is not so easy here as in an



old settled country; proper rooms, diet and nursing are not at command." This shows plainly there was no thought then that mosquitoes and flies were more harmful than "open floorless cabins."

In the first decades of our history's century there were in Jefferson County no medical "specialists" in the modern sense of this term. The general practice of medicine was in itself a specialty for many of these early doctors. The physician was at that time also a farmer, a druggist, a tavern keeper, a minister or engaged in other varied avocations. Dr. Henry Ream<sup>15</sup> of Abingdon in 1845 was a botanic doctor, a Campbellite minister, a tavern keeper, a druggist, and managed a farm of 300 acres of land. He was also unique in that he drove a team of reindeer. Several other of the county's doctors were ministers but the most versatile physician who has lived in Jefferson County was Dr. J. M. Shaffer<sup>165</sup>, a list of whose activities is of interest.

Dr. Shaffer was a scholar and had a large medical practice. He was for years secretary of the State Agricultural Society and managed the Iowa state fairs for fifteen years. He was a taxidermist of note, recognized by the Smithsonian Institute at Washington. His large collection of stuffed birds, mammals and reptiles went to Ames, to Washington, D.C., and to the Paris Exposition. Dr. Shaffer was librarian of the Fairfield library, a state representative, a state senator, a trustee of Iowa Wesleyan College at Mount Pleasant. He was a trustee of the Iowa State Hospital of the Insane at Mount Pleasant. He wrote and delivered many lectures. He taught a Sunday School class and he was a trustee of the Methodist Church. He was an entomologist, an ornithologist and an astronomer. He was a cook and a gardener, raising in his garden plants for his medical use. He wrote, read and spoke Latin, French and German. He was a recruiting officer at Burlington throughout the Civil war, making almost daily trips to Fairfield to look after the sick. In all these activities Dr. Shaffer won distinction, and throughout all this time he read voluminously in medicine.

Such was the varied life of one Jefferson County doctor of whom we have ample records. Many another pioneer physician's life story, because of his intimate relations with so many citizens, should be of interest in this history, had he but recorded his daily activities. The doctors who followed closely the vanishing Indians; who watched the early storks fly over the prairies; who saw the grim reaper gather home the first of the pioneers, these men and women had lives well worthy of permanent record. It is to be regretted that of

the 214 names in our appendix, we could find only the name in the records.

Until 1850 or later the source of medical and surgical supplies for Jefferson County was Keokuk, Iowa. Many medicines were prepared by the doctor himself from plants gathered in the neighborhood or raised in his garden. Opium and calomel, the great essentials, were obtained by a long horseback journey. At one time we note one doctor bought two pounds of calomel. It has always been the custom for the doctors of Jefferson County to carry their own medicines and "make" their own prescriptions. Dr. Shaffer often says in his diary: "I made several prescriptions." He does not say that he wrote several prescriptions—he actually made them. Few indeed, in Jefferson County, have been the prescriptions filled by pharmacists even in the later years. The writer clearly remembers, as a boy, passing Dr. Myers'<sup>132</sup> office and seeing on his table piles of herbs drying ready to be compounded into remedies for all the ills of man; camomile flowers to be given for measles that would not "come out" and stramonium or slippery elm bark for poultices for pneumonia.

#### DRUG STORES

In spite of the fact that the doctors did not write prescriptions, first, after the grocery and general store, drug stores were located in Jefferson County's larger towns. The druggist was often a doctor and as Dr. Charles Clarke said in his letter to Ohio: "Every other man and woman in town professes to know what ought to be done for the sick." The drug store carried crude, dried drugs in large bottles and packages ready for these men and women to take home. The writer, an early drug store clerk, remembers having sold many an ounce of digitalis leaves with which to make an infusion. No question arose as to the age or potency of the leaves. It was possibly fortunate many times that these leaves, in the unskilled hands, were not too potent.

The drug store of those early days in Jefferson County had on one side of the room long shelves of drugs in large gold labeled bottles. The other side of the room had long shelves of patent medicines and school books; in the cellar were barrels of paint and oil, rosin and sulphur. This was the stock. The front window displayed large, wonderfully designed containers of colored liquids while outside was perhaps an enormous mortar and pestle.

What a contrast to the pharmacy of today? The large gold labeled bottles of drugs and to a great extent the "patent medicines" have been swept away. In their place is everything one can imagine and sandwiches are made in wonderful

variety. The colored liquids in the windows are replaced by Parke Davis' and Squibb's handy packages of tablets with which any layman may cure himself. The druggists here have always prescribed freely for their customers, but now some large eastern firms save the local pharmacist this waste of thought for he who runs may read in the window display just what is needed for a cough or for the bowels. Our pharmacists will probably consider the above remarks made in poor grace since our profession has always refused to utilize the ability of their profession in Jefferson County.

The doctor here today having prepared for his use accurately assayed and physiologically tested medicines put up in beautifully made tablets and ampules, wonders at the faith of his fathers in crude drugs. In the early days in Jefferson County many of the druggists were doctors. These doctors prescribed many of the "patent" medicines; nor was this prescribing of the secret mixtures limited to the doctors in the drug stores. The leading doctors of those days used "patent" cough syrups and liniments and bitters. This prescribing saved time and labor and too, non-secret mixtures were not available as they later were in gallon bottles. The later custom of giving to the patient a four ounce bottle filled from one of these gallon containers is no less to be condemned even though the formula was not secret. The writer pleads guilty, with shame, to this lazy mode of life.

(To be continued.)

## OBITUARIES

### HENRY BYRD YOUNG, M.D. 1851-1934

Henry Byrd Young was born at Monmouth, Illinois, March 20, 1851; and died at Burlington, Iowa, on December 10, 1934. He was the youngest son of Dr. John A. Young and Isabella (Wallace) Young. In his autobiography (published in 1934 by Northwestern University) Dr. Young states that when he was about ten years old his father began to take him on trips to see his patients. As time passed he came more and more into the atmosphere of medicine, and after receiving his bachelor of arts degree at Monmouth College it was a foregone conclusion that he would take up his father's calling. He entered the Chicago Medical College in 1872, (later affiliated with Northwestern University) and was graduated in 1875. He stated that in school he "flunked" in ophthalmology and otology—the subjects in which he later specialized.

Dr. Young entered practice in southern Minnesota. On September 22, 1875, he married Miss Hannah Scarboro Parsons who bore him two daughters, (Helen, now the wife of Clyde Topping, Burlington, and Alice, the deceased wife of Wm. T. Coleman).

Dr. Young did not stay long in Minnesota but returned to his old home in Monmouth, Illinois, where he expected to carry on the work of his father who had recently died. In a few months, however, he received a letter from Dr. Henry Gradle, who had been his house physician at Mercy Hospital, advising him to come to Europe for further training. Urged by his wife he decided to do so and sailed in July, 1876. At Vienna he registered with Kirschbaumer for ophthalmologic study and with Grüber for otologic work. After returning home he engaged in general practice until 1879, when, again at his wife's urging, he came to Burlington to become a specialist in ophthalmology and otology. A year later he took advanced work at the Ophthalmic and Aural Institute in New York under Dr. Herman Knapp. He practiced in Burlington fifty-five years.



HENRY BYRD YOUNG, M.D.  
1851-1934

During his medical career he was the author of a number of papers relating to his chosen field. Among these were: Autointoxication Amblyopia (1898), Visual Requirements of Engine-men (1904), The Sociologic Aspects of Deafness (1914), The Sign Language as the Universal Language (1917), and The Negative Phase of Contagion in Trachoma (1920).

For many years he was attached to the medical service of the Burlington railroad and for a number of years was listed as their consulting ophthalmologist.

He was a past president of the Iowa State Medical Society, an honorary member of the Chicago Ophthalmological Society, a life member of the American Academy of Ophthalmology and Otolaryngology, and had served three terms as president of the Des Moines County Society—the last term in 1931. In 1904 he withdrew from organized medicine because he was not in sympathy with the purpose of reorganization promulgated by the American Medical Association. After twenty years of insurgency and after the repeated and unanimous requests of his fellow physicians he re-applied for membership in



the county society; but he never reaffiliated with the national organization.

So much for the historical data. If we stop here, however, this skeleton sketch would be incomplete. Those of us who knew him intimately, who respected him, and who loved him, would like to add something to make him a man of flesh and blood. The above data indicate that he was a man of unusual professional ability; he was much more. He had an unusual and marked personality. Throughout his life he exhibited the keenest interest in all things connected with medicine. Doctors are known for their habit of "talking shop." Dr. Young rarely met a colleague without asking questions regarding some mutual "case," or relating some unusual observation of his own, or referring to recent literature on a subject of common interest. He was the constant friend of the young doctor, ever ready to give him encouragement and professional advice.

He was the perfect specialist—the specialist with a background of general practice who maintained his interest in general medicine and had a surprisingly wide range of knowledge in general medicine. He was a very human man and knew the importance of the "human equation" in handling the sick. His hold on his patients was astonishing. During his more active years his waiting room was crowded; but if he came across a case of particular interest or if a colleague dropped in to discuss a case he seemed completely oblivious of the fact that patients had been waiting, sometimes for hours, to see him. The case in hand claimed his whole attention until he had exhausted his resources for study of that case; and his patients waited or came back.

Strong in his convictions he seldom showed heat and never held rancor in his disagreements with others. He liked to be with other men, and particularly with younger men. Until very recently few of us thought of his age. This, I believe, was due to the fact that he was always interested in everything that was new. His general fund of knowledge was remarkable and he could converse interestingly on many subjects. In the home a rare blending of dignity and friendliness made him a delightful host.

He had traveled extensively. Some six years ago he made a trip to Samoa and a year or two before that he spent several months in Mexico. His accounts of these excursions were very interesting for he saw much more than the average traveler.

On the day after his death a mutual friend made this observation: "Dr. Young came the nearest to extracting the last drop of pleasure from life of any man I have ever known."

In the last paragraph of his autobiography he says: "If in the end I am adjudged as having rendered a fairly efficient service to mankind and, amidst the trials and temptations of that service, have remained the considerate gentleman, I will be content; for that is the record that I was long ago enjoined to make."

We so adjudge.

## PETER ALFRED BENDIXEN 1882-1934

Dr. Peter Alfred Bendixen died of coronary occlusion while on a hunting expedition near Beardstown, Illinois, on December 30, 1934. Dr. Bendixen was born in Davenport, Iowa, on October 8, 1882. He attended the University of Chicago where he received the degree of bachelor of science in 1902, and in 1905 received his medical degree from Rush Medical College. He took postgraduate work in Berlin, Paris,



PETER ALFRED BENDIXEN  
1882-1934

and Vienna, and on his return to this country, took up the practice of surgery in Davenport, devoting particular attention to industrial surgery. He was surgeon to many railroads and to a large number of the public service and industrial concerns of his community.

Dr. Bendixen had always taken an active part in the organization work of his profession. He was a member of the Scott County Medical Society, the Iowa State Medical Society, the American Medical Association, the American College of Surgeons, the American Association of Railway Surgeons, the Western Surgical Association, the Central States Society of Industrial Medicine and Surgery (of which he was president), the Chicago, Milwaukee, St. Paul and Pacific Surgical Association (which he was also serving as president), the Iowa and Illinois Central District Medical Association, the Illinois Industrial Association, the American Industrial Association, and the Rock Island Railway Surgeons Association. He was serving as a member of the Cooperative Fracture Committee of the American Medical Association, of the Fracture Committee of the American College of Surgeons, and of the Legislative Committee of the Iowa State Medical Society. He was a frequent contributor to medical periodicals and was a member of the Medical Authors Association.

Dr. Bendixen was widely known in medical circles for his remarkable energy, his congeniality, his enthusiastic support of his profession, as well as for his ability as an orthopedic surgeon.

Oliver J. Fay, M.D.



# THE JOURNAL BOOK SHELF

## BOOKS RECEIVED

**SYSTEM OF DIET WRITING**—By William S. Collens, M.D., chief of diabetic clinic, Israel Zion Hospital, Brooklyn, New York. Form Publishing Company, 200 Hudson Street, New York City, 1934. Price, \$5.00.

**THE HEART VISIBLE**—A Clinical Study in Cardiovascular Roentgenology in Health and Disease. By J. Polevski, M.D., attending physician and cardiologist, Newark Beth Israel Hospital, Newark, New Jersey. F. A. Davis Company, Philadelphia, 1934. Price, \$5.00.

**INSTITUTIONAL CARE OF MENTAL PATIENTS IN THE UNITED STATES**—By John Maurice Grimes, M.D., four years a staff member of the Council on Medical Education and Hospitals of the American Medical Association. Published and distributed by the author, 1816 North Clark Street, Chicago, Illinois, 1934. Price, \$3.00.

**INTERNATIONAL CLINICS**—Volume IV, Forty-fourth Series. Edited by Louis Hamman, M.D., visiting physician, Johns Hopkins Hospital. J. B. Lippincott Company, Philadelphia and London, 1934. Price, \$3.00.

**MANUAL OF CLINICAL LABORATORY METHODS**—By Pauline S. Dimmitt, Ph.G., medical technologist, Stout Clinic, Sherman, Texas. Illustrated with 36 engravings, including seven full page colored plates. F. A. Davis Company, Philadelphia, 1934. Price, \$2.00.

**MINOR SURGERY IN GENERAL PRACTICE**—By W. Travis Gibb, M.D., consulting surgeon, City Hospital and Central and Neurological Hospitals, New York. 417 pages with 148 illustrations. Paul B. Hoeber, Inc., New York, 1934. Price, \$5.00.

**A TEXTBOOK OF GYNECOLOGY**—By Arthur Hale Curtis, M.D., professor and head of the department of obstetrics and gynecology, Northwestern University Medical School. Second edition, reset; 493 pages with 300 original illustrations. W. B. Saunders Company, Philadelphia and London, 1934. Price, \$6.00.

**A TEXTBOOK OF HISTOLOGY**—Functional Significance of Cells and Intercellular substances. By E. V. Cowdry, professor of cytology, School of Medicine, Washington University. Illustrated. Lea & Febiger, Philadelphia, 1934. Price, \$5.50.

**TUBERCULOSIS IN THE CHILD AND THE ADULT**—A discussion of pathologic anatomy, physiology, immunology, diagnosis and treatment. By Francis M. Pottenger, M.D., clinical professor of medicine, University of Southern California School of Medicine. Illustrated. C. V. Mosby Company, St. Louis, 1934. Price, \$8.50.

**THE YEAR BOOK OF GENERAL MEDICINE, 1934.** Edited by George F. Dick, M.D., Lawrason Brown, M.D., George R. Minot, M.D., William B. Castle, M.D., William D. Stroud, M.D., and George B. Eusterman, M.D. The Year Book Publishers, Inc., Chicago, 1934. Price, \$3.00.

## BOOK REVIEWS

### CATARACT, ITS ETIOLOGY AND TREATMENT

By Clyde A. Clapp, M.D., associate professor of ophthalmology, Johns Hopkins University. Octavo, 266 pages, illustrated with 92 engravings. Lea & Febiger, Philadelphia, 1934. Price, \$4.00.

This volume is said to be the only comprehensive work in English dealing with the normal crystalline lens and its pathologic changes. It is written by an observer of much experience, who has had many facilities for observation.

In twenty-five chapters, contained in less than three hundred pages, the author covers a wide range of facts concerning the crystalline lens, beginning with the embryology and development of this structure and carrying his discussion to the treatment of its various afflictions, including and stressing all forms of cataract and cataract operations.

At the close of each chapter is a complete bibliography so that the specialist may continue his reading. Numerous line drawings and photographs illustrate the text.

The book will be a valuable addition to the library of the student of ophthalmology, as well as to the specialist in this branch of practice.

### CONCEPTION PERIOD OF WOMEN

By Dr. Kyusaku Ogino, Head of the Gynaecological Section of Takeyama Hospital, Niigata, Japan. English translation by Dr. Yonez Miyagawa, Director of Gov-

ernment Institute for Infectious Diseases, Tokyo Imperial University, Hongooku, Tokyo, Japan. Medical Arts Publishing Co., 1803 Wood Street, Harrisburg, Pa. 1934. 8vo., leatherette binding. Price \$1.00.

Two men are outstanding as pioneers in the new work of determining the fertile and non-fertile periods in the menstrual cycle of women; Knaus of Austria and Ogino of Japan. This booklet has been prepared by the latter observer and reviews his experience as a gynecologist of distinction for over twenty years. Dr. Ogino was awarded the prize of the Japanese Gynecological Society in 1925 in recognition of his outstanding work in this specialty of medical practice.

In this book he reviews his basic observations and compares them with observations made by other reliable gynecologists. He concludes first, that the human conception period is eight days in its cycle, notwithstanding the length of the menstrual periodicity; and second, that the period preceding the twentieth day before the succeeding menses, that is to say the period from the beginning of the last menses to the twentieth day before the next coming menses, should be deemed the sterile phase, if we disregard a few exceptional cases. The text contains all of the essential data required to operate intelligently the so-called natural system of birth control.

Advanced as the most powerful argument in favor of the use of this theory is that it is an entirely natural, legal and non-injurious method of birth



control, which eliminates entirely the use of artificial and often dangerous contraceptive devices now in practically universal use. Physicians interested in the so-called physiologic contraception should make a careful study of this book by Ogino, and if possible should review the work of Knaus.

#### DR. COLWELL'S DAILY LOG FOR PHYSICIANS

A brief, simple, accurate financial record for the physician's desk. Colwell Publishing Company, Champaign, Illinois, 1934.

Rarely does any bookkeeping device, designed for physicians, meet the needs of physicians who must maintain their own financial records, as well as those employing a secretary or clerk for this purpose.

It appears, also, that most of the systems offered for physicians' records have been devised to supplement a general bookkeeping system, originally planned for other forms of business, and are frequently unwieldy or too complicated for the busy physician to use, unless he can delegate his bookkeeping to a clerk.

Dr. Colwell's Daily Log originally appeared seven years ago. It is a system designed by a physician with a background of some eighteen or twenty years of practice. Its continued and increasing popularity bespeaks the fitness of the book for the purpose for which it has been designed. The loose leaf ledger provides a separate page for each day's transactions with appropriate spaces for monthly and annual summaries. The large sized pages provide ample space for a record of thirty-two patients a day with appropriate columns for the tabulation of the service rendered, and the charges and credits associated with the transaction.

Practical experience with the system proves it to be a brief, systematic, and entirely useful system of bookkeeping for the busy physician.

#### GYNECOLOGY

By Brooke M. Anspach, M.D., professor of gynecology, Jefferson Medical College. Fifth edition, reset and completely revised. 679 new illustrations, of which ten are in colors. J. B. Lippincott Company, Philadelphia and London, 1934. Price, \$9.00.

This volume has been prepared especially for the general practitioner who may be called upon to treat a considerable number of gynecologic conditions, although the form and arrangement of the material incorporated in this work renders it highly suitable as a textbook for the medical student.

Following introductory chapters dealing with the anatomy, physiology and embryology of the female generative organs, the author presents those methods of examination and diagnosis particularly applicable to diseases of the female genito-urinary system. Succeeding chapters deal with the various diseased conditions commonly encountered in gynecologic practice. A very instructive chapter deals with the hygiene and proper care of adolescent girls, a sub-

ject which is often neglected in work of this sort. In the current edition the author has introduced a chapter on constitutional types and endocrine disorders.

This edition has been completely rewritten and reset so that it constitutes an essentially new work in the field of gynecology.

#### MARRIAGE AND SEXUAL HARMONY

By Oliver M. Butterfield, M.A., Monterey Park, California. Emerson Books, Inc., 333 Sixth Avenue, New York City, 1934. Price, fifty cents.

Every practicing physician confronts the problem of giving needed advice on sexual matters, particularly to newly married couples. It is difficult, indeed, for a physician under the usual conditions of office practice to do more than answer some specific questions which may be presented to him. For this reason some physicians have found it advisable to have at hand a brief and non-technical discussion of this matter so that the inquiring patient may read and digest the discussion at his leisure. This pamphlet sized treatise is well suited for this purpose. The scope is sufficiently broad to meet the needs of the average patient and at the same time sufficiently concise and brief to insure reading and understanding. The pamphlet, according to the author, has been approved and is used by a considerable number of welfare and maternal health clinics, as well as a number of educational and religious institutions whose advice is sought by newly married couples.

#### NATURE'S WAY

The Fertile and Sterile Periods of Marriage. By Victor Cox Pedersen, M.D. G. P. Putnam's Sons, Minton, Balch & Company, 2 West 45th Street, New York City, 1934. Price, \$1.00.

This small volume has been prepared for the lay reader. The factual background is taken from the works of Ogino in Japan and Knaus in Germany. The author presents a full discussion of the ovulation or fertile period as related to the menstrual cycle, and states that in a German clinic the method was found effective in about 90 per cent of the women observed. The method was checked both from the standpoint of prevention and promotion of conception. He concludes that in the average woman the most fertile period is from the fourteenth to the sixteenth day following the first day of the menstrual cycle. For the prevention of conception he recommends sexual abstinence for a ten day period between the tenth and twentieth day following the first day of menstruation. To be effective the menstrual cycle must be charted for at least six months so that its periodicity can be established. Data for the unusual or abnormal cycles require special calculation.

Chapter II discusses the "Practical Aspects of

Nature's System of Birth Control" and reviews the work of other observers. The final chapter, Chapter III, deals with "The Social and Ethical Aspects of Birth Control."

The book is well written.

#### SEX HABITS—A VITAL FACTOR IN WELL BEING

By Abraham Buschke, M.D., formerly professor extraordinary at the University of Berlin, and Friedrich Jacobsohn, M.D. Translated from the German by Eden and Cedar Paul, with a foreword by Gerard L. Moench, M.D., associate professor of gynecology, New York Postgraduate Hospital of Columbia University. Emerson Books, Inc., New York City, 1933. Price, \$2.50.

The opening chapter of this book imparts definite and practical information concerning the anatomy and physiology of the male and female reproductive organs. These chapters are followed by ones dealing with those factors concerned in reproduction and fertilization. One of the most important and most useful chapters in the entire book is the one dealing with puberty and the many problems of physical and psychical adjustments which take place during this critical period. Other chapters ably present the sexual impulses in males and females, while others deal with the abnormalities of sex relationships. A number of well selected photographic illustrations assist materially in a proper understanding of fundamental principles such as those concerning the anatomy of the sexual organs and the processes involved in the fertilization and development of the ovum.

To the physician already acquainted with the several recent volumes which have appeared and which discuss problems of sex relations, this volume may be considered as just another book, or perhaps a duplication. While it is true that many phases of the sex problem appear under the same treatment in this volume as in its predecessors, it is the reviewer's opinion that no volume on this subject has been written with quite the same degree of insight and the same amount of practical care which has entered into the composition of this book. In our opinion it is one of the best which has yet appeared dealing with those vital problems of sex and sex relationship. The physician who feels an educational responsibility in matters pertaining to this subject should become familiar with this volume so that he may intelligently recommend it to properly selected lay readers.

#### SYNOPSIS OF GENITO-URINARY DISEASES

By Austin I. Dodson, M.D., professor of genito-urinary surgery, Medical College of Virginia, Richmond, Virginia. With 111 illustrations. C. V. Mosby Company, St. Louis, 1934. Price, \$3.00.

The author of this small volume is a clinical

teacher and has written his book in full appreciation of the difficulties met by the medical student in obtaining a satisfactory working knowledge in the various specialties. In the first chapter the author presents a summary of the most prominent signs and symptoms of urologic diseases. Chapter two deals with those instruments needed for urologic diagnosis, while chapter three presents a summary of the anatomy of the genito-urinary organs. Chapters four to fourteen, inclusive, are arranged largely according to the etiology of the disease. The brevity of discussion concerning an individual condition might suggest a sketchy or too brief consideration. For example, acute gonorrheal urethritis, one of the most common of all infectious diseases, covers less than seven pages. However, on these seven pages the author has presented a condensed history, a discussion of prevalence, an epitome of the etiology and pathology, symptoms and clinical course. Two and one-half pages are devoted to the subject of treatment which is introduced with the significant statement, "Gonorrheal urethritis is a 'self-limited' infectious diseases." A second paragraph is reflected in the sentence, "The most important feature of the treatment is the general hygiene," while a third paragraph begins, "Local treatment consists of irrigations and injections . . ." Finally we are pleased to note that the concluding sentence in the section on treatment states, "Vaccines and chemotherapy are of doubtful value in the treatment of acute gonorrhea."

The volume appears to be entirely safe and sufficient for the purpose for which it has been written.

#### A TEXTBOOK OF HISTOLOGY

Functional Significance of Cells and Inter-cellular Substances—By E. V. Cowdry, professor of Cytology, School of Medicine, Washington University. Illustrated. Lea & Febiger, Philadelphia, 1934. Price, \$5.50.

As evidence of the changing attitude concerning the teaching of histology, the author has prepared his text along unusual and modern lines. He has purposely omitted much of the embryology and biology ordinarily included in such a text, and has with equal thought and discernment included much that is usually discussed only in physiologic or pathologic works. His discussions for the most part deal with tissues as they are associated with other tissues in the composition of the functioning whole. Histology under this treatment loses much of its tedium and abstraction and becomes a necessary and fascinating part of the general scheme of basic science.

Equally progressive are the illustrations used in the text. All have been chosen because of their fitness to exemplify a truth not easily appreciated from reading matter. Many are in colors. The clear and descriptive presentation, together with the rational composition, admirably suits the text to undergraduate medical teaching.





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### CARDIAC INSUFFICIENCY IN OBESE INDIVIDUALS\*

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Fat is commonly deposited over the base of the heart, over the auriculoventricular groove, around the bases of the great vessels, along the distribution of the coronary arteries, along the interven-tricular sulci, and over the right ventricle, especially along its right border and anterior surface. The condition of excess fat in these portions, and its penetration between the muscle bundles and fibers, is one type of fatty heart; the condition is designated as "adiposity" of the heart or "obesity" of the heart. In another type of fatty heart the condition is known as "fatty degeneration."

Considerable confusion has arisen, from the use of such terms as "fatty degeneration," "fatty infiltration," "fatty metamorphosis," "cor adiposum," "adiposity of the heart," "obesity of the heart," and so forth. Adiposity of the heart is separate and distinct from fatty degeneration of the heart. In adiposity of the heart, fat penetrates between the muscle bundles and individual muscle fibers. Fatty degeneration is the state in which fatty changes take place within the cell (cytoplasm) and which most pathologists believe to be the result of diminished utilization (oxidation) of the fat normally brought to the muscle cell. This latter type is found in chloroform poisoning, phosphorus poisoning, pernicious anemia, certain wasting diseases, and certain types of infection. Some authorities believe that this type of fatty heart rarely interferes with cardiac function. We know of no instance in which it has been proved conclusively that cardiac failure has resulted from this process alone, and we know of no way to recognize it clinically.

We recently studied the clinical and postmortem records of 136 obese patients. There was a marked predominance of females. The patients averaged 70 pounds (31.8 kg.) over weight. There were three children, aged respectively, ten months, ten years, and fourteen years. Of the patients, 133 were adults and the average age of all, children and adults, was fifty-two and one-tenth years. The children were excluded from computation of weight of the body and weight of the heart. For comparative purposes it was advisable to divide the cases into four groups.

In group 1, there were fifty-two cases and the patients failed to reveal any evidence of heart disease other than abnormal amounts of subepicardial fat. In none of the cases in this group was hypertension present nor was there positive evidence that hypertension had previously existed. There were no significant changes in the coronary arteries. The average weight of the hearts of male patients in this group was 444 gm., an increase of 150 gm. over normal. The average weight of the hearts of females was 354 gm., an increase of 95 gm. over normal.

Group 2 consisted of nine cases which were of unusual interest, owing to the fact that the usual forms of heart disease were absent, yet the patients presented signs and symptoms of cardiac insufficiency. Four of the patients died from congestive heart failure. All diseases capable of producing cardiac hypertrophy, including hypertension, were excluded. So far as it is possible for us to ascertain, the patients represented instances of varying degrees of heart failure, the result of obesity. The youngest patient was thirty-three years of age, and the oldest, seventy-four years; the average age was fifty-one and five-tenths years. There were two men and seven women. The average cardiac weight in this group was 450 gm.

Group 3, cases of obesity with hypertension, was composed of sixty patients, and all had hypertension. The average blood pressure, in millime-

\* Read before the Northwest Iowa Medical Society, Sheldon, Iowa, April 26, 1934.

ters of mercury, was 175 systolic and 82 diastolic. The youngest patient was thirty-two years of age, and the oldest, seventy-four years; the average age was fifty-four and one-tenth years. The average cardiac weight in this group was 476 gm.

Group 4, cases of obesity with various forms of heart disease, was a miscellaneous group of fifteen cases comprising nine cases of coronary sclerosis, one case of aortic stenosis, one case of syphilitic aortitis with aortic insufficiency, one case in which there previously had been exophthalmic goiter, and one case of cardiac disease of indeterminate origin. There were two cases of hepatic cirrhosis. The youngest patient in this group was

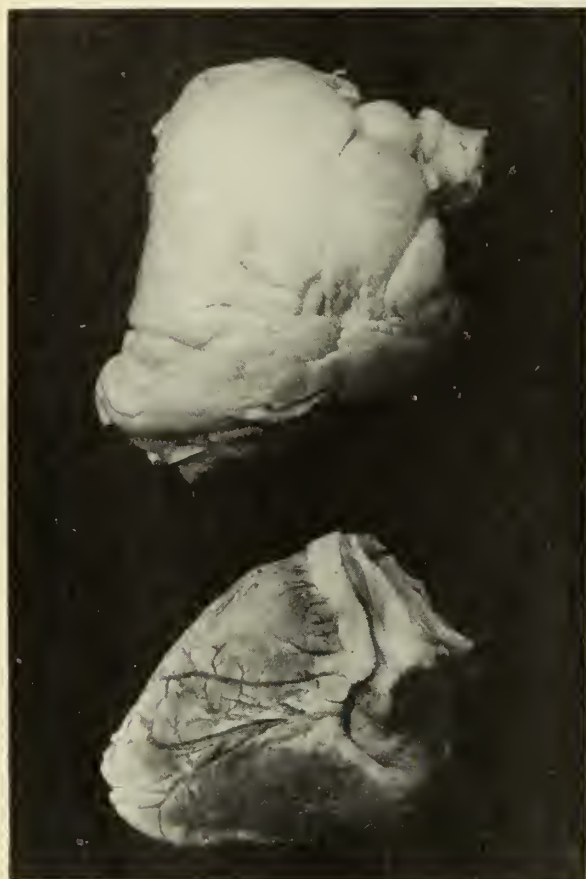


Fig. 1. The hearts are in a specimen jar filled with a fluid of substantially the same specific gravity as water. The upper heart is from a very obese individual and contains excess amounts of subepicardial fat in such quantities that it floats on water. The lower heart is from an individual whose weight was normal. The heart contains a normal amount of fat, and sinks.

twenty-three years of age, and the oldest, seventy-five years; the average age was fifty-three and six-tenths years. The average cardiac weight was 473 gm.

The association of cholelithiasis and obesity is well recognized, and in this series of cases there were fifty of gallstone (37 per cent). Four pa-

tients (three per cent) had diabetes. Hypertension occurred in sixty cases (44 per cent). Fatal pulmonary embolism occurred in twenty-six cases (19 per cent).

The subepicardial fat in these cases varied from a slight increase above normal to extreme deposits which incased the entire heart with several layers of fat, in some portions measuring more than two centimeters in thickness. In several instances the excess deposits of fat were present in such quantities as to cause the hearts to float on water. Hearts that contain normal amounts of fat will sink readily (Fig. 1).

In this series of cases there was an actual excess of epicardial fat in 129 cases (95 per cent). Fat from the epicardium penetrated the muscle in varying degrees. As a rule, there was a definite correlation between the excess amount of epicardial fat and the amount of fat penetrating between the muscle bundles, but this was not uniformly true. In all of the cases more fat was deposited in the wall of the right ventricle than in the wall of the left ventricle. In some of the extreme cases there were certain places where fat penetrated completely through the wall of the right ventricle, and fat was deposited even beneath the



Fig. 2. A photomicrograph, made by Smith and Dry, in the course of some work, now in progress, on the vascularity of adipose tissue. The illustration is of injected subepicardial fat of a rabbit. The vascularity of adipose tissue is evident. A small capillary lies between nearly every two fat cells; a, fat cell membranes; b, capillaries.

endocardium. In a few instances the fat penetrated into the papillary muscles of the right ventricle. As a rule, the fat penetrated the muscular walls in very irregular distribution. In some instances the line of demarcation between the cardiac muscle and subepicardial fat was entirely obliterated. This was true only of the right ventricle.

In the total series of cases in which examinations for fat were made, no instances occurred in which intracellular fat was increased above normal.



Doubtless many factors, both local and general, are concerned in the production of cardiac insufficiency among obese individuals. The local factors are excess deposits of fat in the subepicardial space, and its penetration between the muscle bundles, and in some instances between the individual muscle fibers. This excess deposit of fat, we believe, impairs the function of the heart by its interference with cardiac activity and with nutrition of the myocardium. General factors are the increased amount of work to be performed by the heart, the excess amount of tissue to be nourished, and the increased metabolism of the patient. The excess adipose tissue is vascular. A capillary is visible between almost every two fat cells (Fig. 2). This intimate relationship between the blood capillaries and the fat cells must be important in the metabolic function of fatty tissue. This excess fat is not to be regarded as merely a passive storehouse, but rather as a relatively active, vascular organ.

We believe that the part played by obesity in producing cardiac failure in most instances consists in adding a burden to that imposed by some other disease already present, such as hypertension or coronary sclerosis, and that any cardiac disease is distinctly more serious if generalized obesity is present. In rare instances cardiac adiposity is primarily responsible for cardiac failure.

## SYMPOSIUM ON ARTHRITIS\*

### GENERAL CONSIDERATIONS

✓ JOHN C. PARSONS, M.D., Creston

"Although the interest of the medical profession in the chronic arthritides is constantly increasing it is still far from being commensurate with their medical, social and economic importance . . . The arthritides lie definitely within the scope of activities of the general practitioner and the internist. Their opportunities and responsibilities in connection with these patients cannot be lightly regarded and our existing knowledge of the etiology, pathology, differential diagnosis and therapy of chronic joint disease is entirely adequate to banish most of the suffering and disabilities that now follow in their wake." This statement has been published by Wyatt,<sup>1</sup> and is, I believe, the consensus of opinion which is held by most of the energetic workers in the cause of alleviation of chronic arthritis. It is for our own good as physicians that we again review the concepts of the American Committee for the Control of Rheumatism. This committee is doing everything in its power to bring to the medical profession a common sense viewpoint of

the factors which influence the production of arthritis and also a sound basis for the treatment of it. In order that we may again have it brought to mind I present their publication:

"1. The disease, chronic arthritis, prevalent in all temperate zones, represents one of the most important, if not *the* most important of existing social and industrial handicaps.

"2. The committee conceives of the disease as a generalized disease with joint manifestations. Certain prodromes may be recognized and it is of vital importance that they be recognized.

"3. It is the opinion of the committee that at the present time no single infectious agent or any completely defined dietary deficiency or metabolic disturbance has been conclusively shown to be the sole cause of these disorders. The committee inclines to the belief that many of these factors, or certain combinations of these factors, under appropriate circumstances may basically underlie the onset of the disease.

"4. The committee feels it is of vital importance that the medical profession have its attention directed to the methods of treatment of proved value which are at present at its disposal. In spite of etiological uncertainties the committee feels that properly managed therapy, which takes into account most infectious and metabolic factors, has yielded results which encourage optimism and impose the obligation of further developing such methods.

"5. In the light of the foregoing considerations the committee proposes to broadcast as widely as possible, both to the profession and to the public, its concept of the nature of the type of arthritis included under the heading chronic rheumatism, its belief as to the probable predisposing and exciting factors of the disease and the knowledge which the committee possesses or may acquire as to the most efficient methods of treatment."

In our general considerations of the subject of chronic arthritis we shall include only three types: first, the chronic proliferative arthritis or rheumatoid arthritis; second, chronic degenerative arthritis or osteo-arthritis; and third, metabolic arthritis or gout. The first two types are the ones which shall receive most of our consideration.

Chronic arthritis is one of the oldest of all diseases. It has been demonstrated that the history of disease begins with the Paleozoic and Proterozoic periods, one to two hundred million years ago. Fossil remains of the Paleozoic era have yielded abundant evidence of dental caries, pyorrhea-alveolaris, osteomyelitis and fracture as well as chronic arthritis. Virchow in 1870 found "cave gout" in a Pleistocene cave bear which is identical with the

\* Presented before the Eighty-third Annual Session, Iowa State Medical Society, Des Moines, May 9, 10, 11, 1934.

arthritis deformans found in so many Egyptian mummies and in the people of today.

Wyatt,<sup>1</sup> states "The number of persons disabled by the disease is much out of proportion to the number who die from it." He also quotes the Hagerstown Survey which was made between December, 1921, and March, 1924; 16,517 life years with 17,847 illnesses. Disability from rheumatism was 16.6 per thousand; heart disease, 10.1 per thousand; paralysis, 1.5 per thousand; cancer, 1.3 per thousand; arteriosclerosis, 1.2 per thousand; diabetes, 0.9 per thousand; and cerebral hemorrhage, 0.7 per thousand. The Metropolitan Life Insurance Company found the incidence in women to be 2.8 per thousand, and in men, 1.9 per thousand; showing the incidence in women to be 50 per cent more than in men. According to the Hagerstown Survey the incidence was: men, 11 per thousand, women, 22 per thousand; or 100 per cent higher in women. At the age of 55 or over, the incidence is 11 per thousand, from 35 to 54 it is 3.1, from 15 to 34 the incidence is 0.9, and under 15 the incidence is 0.2 per thousand. It is estimated that arthritis and bursitis exact an annual loss of more than 7,500,000 weeks of work in the United States with a consequent economic loss of more than \$200,000,000 yearly.

The International League for the Control of Rheumatism recommends the use of the terms "rheumatoid arthritis" and "osteo-arthritis." These correspond to the present terms, "chronic proliferative" and "chronic degenerative arthritis." Other names used for chronic proliferative arthritis are atrophic arthritis, as used by the American Committee; rheumatoid arthritis, which is used by the British Ministry of Health; and chronic infectious arthritis. In childhood it is called Still's disease. In spondylitis one finds spondylose rhizomelique, which was described by Marie in 1898; Strumpel-Marie type, described by Strumpel in 1907; and spondylitis ossificans ligamentosa, described by Knaggs. Other names for chronic degenerative arthritis are hypertrophic arthritis, as used by the American Committee; osteo-arthritis, which is used by the British Ministry of Health; morbus coxae senilis; and Heberden's nodes. In spondylitis common terms are von Bechterew type (1899), and spondylitis osteo-arthritis as used by Knaggs.

The American Committee for the Control of Rheumatism lists the following factors influencing the onset of chronic arthritis. The disease is a generalized one with joint manifestations, but there may be hereditary tendencies, lowered constitutional resistance and so-called "arthritic soil," based on a consideration of generalized body build. Further influencing factors are fatigue, either men-

tal or physical; infection, which may be focal or general; dysfunction of the gastro-intestinal tract; excessive and inadequately balanced food intake or insufficient food; exposure to cold or damp, possibly a congenitally poor nervous system, and altered anatomic relations such as are brought about by faulty body mechanics, multiple pregnancies, etc. These factors all lead to the next step which is the production of a predisposed individual. An effort is then made by nature to meet the various types of toxemia such as those from foci, or gastro-intestinal dysfunction, faulty elimination, etc., and demands are made upon the body reserves for this purpose. Agglutinins are formed, leukocytes may be increased, and the sedimentation rate may be increased. These demands upon the body reserves result in altered physiologic processes, probably through the sympathetic nervous system. These are evidenced locally in the joints and muscles, and sometimes other tissues, such as the periarticular tissues; and systemically, alterations in blood pressure, nerve instability, body metabolism, and sometimes conscious mental strain, which produces further fatigue, usually toxic in origin and due to the effort to carry on in daily life against the symptoms of the disease.

All these factors further lead to a production of true arthritis. The type of arthritis, whether atrophic or hypertrophic, depends upon age, sex, type of toxemia or infection, occupational strain, trauma, and other factors. Atrophic or rheumatoid arthritis is usually found in younger persons, and is more common in slender, ptotic persons with insidious or acute onset, pain and disability, pronounced, and multiple joints usually involved, the most common findings being the fusiform fingers. Hypertrophic arthritis or osteo-arthritis is usually found in persons on or beyond middle life, commonly in well nourished people; the onset is usually insidious and occasionally subacute. General health, as a rule, is much less disturbed than in the atrophic type, and pain and disability is sometimes slight although the results, deformities and crippling, may be severe. The disease is a systemic one and usually polyarticular, but the symptoms may be in only one or two joints.

Pemberton<sup>2</sup> states "The syndrome of arthritis is demonstrably accompanied by a state resembling vasoconstriction in the capillary bed at the periphery, over-active sympathetic nervous system, bizarre configurations and dysfunctions of the gastro-intestinal tract, and certain disturbances of the blood chemistry, including the blood gas equilibrium . . . Arthritis is not a disease of joints but a systemic one in which the joints are caught up more or less incidentally. Many an arthritic goes through life with no arthritis but great dis-



comfort in the form of myositis, headache, iridocyclitis, neuralgia and neurasthenia."

In the case of chronic degenerative arthritis we have a disease which usually occurs at or after the age of 45 years. It is especially common in women at the time of the menopause, starting in the weight-bearing joints, ankles, knees and hips, especially the knees. It is thought that infection plays little part in this type of arthritis, but that the arthritis is due mostly to increased trauma plus decreased blood supply. A very interesting experiment has been carried out by Goldhaft<sup>17</sup> and his associates in which the blood supply to the patellae of dogs was diminished. In the young dogs no change, or very little change was noticed whereas in older dogs, after interference of blood supply, the usual traumatization of running, jumping, etc., caused hypertrophic arthritis with definite lipping of the margins of the joints. Clinically it would seem that infection plays little part in this type of arthritis because results from vaccine treatment, pathologic examinations as to the presence of organisms in joints, and evidences of proliferation of joint soft tissue have been negative. However, there are some cases of apparent "mixed types" in which there is an infectious periarticular process superimposed on the degenerative type. Hypertrophic arthritis is most commonly found in x-ray examinations of the spine and larger weight-bearing joints in people fifty years of age or over.

In the case of gout we are likely to think of tophi in the ears, large joints with chalk deposits, and painful toes. These are the very advanced cases which should never be mistaken in diagnosis, but undoubtedly there are many more people who have gout than these advanced cases would indicate. The diagnosis of gout rests on the presence of migratory pain, usually in the distal extremities of the feet, very commonly in the big toe, and a constant increase of blood uric acid. The typical x-ray findings in gout in the late stages are "punched out" areas in the bone, usually of the feet or of the hands, due to collections of crystals within the bone which, of course, show a very light area in the x-ray film.

The differential diagnosis of chronic joint disease in any individual is practically impossible if one examines only the joints. The whole constitution must be taken into consideration and it is here that we see very great differences between the two types of people which are likely to have the two great types of arthritis. In the chronic proliferative or atrophic type we usually see persons who are definitely underweight, look sick, are slightly to moderately anemic, may complain of paresthesia, who nearly always have cold, clammy

extremities and complain of difficulties with circulation; they may even have somewhat bizarre reflex findings. They may complain of faulty elimination and show definite likes and dislikes as to their food. In fact, they are likely to be somewhat "finicky" eaters. Despondency is a common finding in this type of patient and a few may have a definite mental aberration which is probably toxic in origin. In the hypertrophic type the patients are likely to be very robust and tend to be overweight. The joints usually complained of are the weight-bearing joints and the hands. There is very little of the migratory pain seen in the infectious type and the stiffness is most marked in the morning, wearing off with muscular use. The specific types of arthritis must be excluded always, as those arthritides due to tuberculosis, lues or specific organisms may be somewhat of a problem for a time until they can be properly diagnosed.

Some help may be gained from the use of laboratory procedures in the proper classification of the types of arthritis in a case for diagnosis. Early in the disease the x-ray is of little help. Later, of course, the characteristic findings of atrophy and decalcification of the bones in the proliferative or atrophic type, and the lipping of the margins of the joints in the hypertrophic type, are evident. The blood sedimentation rate is considerably higher in the proliferative type than in the degenerative type, but reliance should not be placed on the test in a single case. Glucose tolerance is diminished in the rheumatoid type, but normal in the degenerative type. Many workers feel that the agglutination test against streptococci of various types is sufficiently positive to be of great value in making the diagnosis. An interesting finding has been published and confirmed by various writers in reference to the red blood count, which has been found, in chronic proliferative arthritis to be much less on the first drop of blood than on succeeding drops, due, it is thought, to the decreased capillarity of the skin. The Schilling count may be of great help in differentiating the types of arthritis, since proliferative arthritis in the active stage usually has a definite "shift to the left," which is not found in degenerative arthritis. Basal metabolism tests may show lowered thyroid output, a fairly common finding in proliferative arthritis. Blood chemistry may be of great value, as an occasional case of hyperparathyroidism is recognized by the finding of decreased blood calcium, and, of course, gout may be found by the constant increase of uric acid in the blood.

It has also been found that definite temperature changes in the extremities of patients with arthritis take place when they are subjected to cold. In atrophic arthritis, when the extremity is sub-

jected to cold, it will not become as cold as that of a normal person, but it does not return to normal temperature after cessation of the cold nearly as soon as that of a normal person. Capillary microscopy may be of some help in differentiating the type. This is a new procedure and as yet a definite place for it has not been evaluated. In some cases it has been considered so important to classify properly the type of arthritis which is present, that tissue specimens have been removed from joints for microscopic examination.

Bacteriologic examinations have proved somewhat disappointing as there is a definite difference of opinion between many workers. Some find positive blood cultures for various organisms in a high percentage of cases, with positive cultures from joints, and regional lymph glands; while others, apparently using a similar technic, are unable to obtain any positive results. It is altogether likely that the streptococcus, which is accused by so many of being the actual etiologic factor in the production of chronic proliferative arthritis, is in fact only an influencing factor, and that the real process in the joint may be an allergic reaction. It is on this theory that many workers have used vaccines intravenously, rather than subcutaneously, in an attempt to desensitize the patient.

The treatment of gout may be dismissed with a few words. A purine-free diet and the judicious use of cinchophen, or other uric acid-eliminating drugs are indicated.

In the case of hypertrophic arthritis, nothing can be done to diminish the amount of bony hypertrophy which has already taken place. Vaccines are of little or no value in this type of arthritis. Most relief can be gained from the use of heat and massage and relief from trauma. Ankylosis is rare, and an effort should be made to keep the joints in action by passive motion and exercises. Many people with this type of arthritis are obese and a definite reduction of weight not only reduces the trauma to the weight-bearing joints, which are the ones usually affected, but also increases the general sense of well-being. Removal of foci of infection, while possibly not as important in this type as in the proliferative type, should nevertheless not be overlooked.

The treatment in chronic infectious arthritis is most important and should not, of course, be limited to the joint alone. Too many of us have been looking for single methods of treatment, something which may be poured out of a bottle or injected from a syringe, which will definitely influence the patient for the better. In this type of arthritis it is not so simple. The treatment should be directed primarily toward the betterment of the patient's general condition. Nearly always they

are undernourished, slightly anemic and, most important of all, with disturbed circulation.

Rest is just as important to soft tissue in which the physiologic cycle is broken as it is to a bone which is broken. Therefore these patients with proliferative arthritis should have both general rest and physical and mental rest, freedom from emotional disturbances and worries insofar as possible and local rest to the affected joints. Careful daily motion of the joints by the patient himself should be undertaken. Bed rest is the best possible thing for a patient whose capillary equilibrium has been disturbed and whose sympathetic nervous system is in imbalance. Focal infections should be looked for, and if they are found should be removed unless the patient is in a very active infective state. In such a case an attempt to build up the general body condition should be made before the infections are removed. It should be remembered that infection may not be limited to the tonsils, teeth or sinuses, but that a chronic appendiceal or chronic gallbladder condition may be present, as well as an infected crypt in the anal canal, and not uncommonly an infected prostate. However, one should remember that removal of the focal infection does not complete the treatment of arthritis; it merely opens the gate into the large enclosure of further treatment.

Faulty elimination should be corrected and it has been shown that occasional saline cathartics or colonic flushing improve this condition, driving out a certain number of organisms which might be harbored in the bowel. Enough water should be ingested to avoid concentration of the urine, and the skin function should be kept active, sometimes by inducing perspiration. It has also been found that one of the most important single factors is the diet. These patients should be put on a definitely restricted diet with lowered carbohydrates, proteins should be left in an adequate amount, and the fats slightly increased. However, the caloric requirements of the patient should not be fulfilled for some time after the treatment has been begun, unless they are very undernourished. It is important that the starches and sugars be definitely restricted. In addition the vitamins should be added: viosterol and haliver oil or cod liver oil, for Vitamins A and D; yeast or yeast extracts, for Vitamin B, which has a very definite effect on the tone of the bowel; and fruit juices for Vitamin C.

Physical therapy is an important adjunct in the treatment of this form of arthritis. Heat is the most valuable of all the modalities, used locally in order to open up blood channels and increase circulation, and systemically, with the addition of hydrotherapy at times to influence body metabo-



lism. The use of hot and cold contrast baths is beneficial in many cases, to stimulate circulation. Massage is often valuable. It should never be rough or forceful, but should be an effleurage, or light stroking, in order to increase and facilitate circulation. Heliotherapy may be helpful, as may also artificial light treatment. The climate may be an important factor, and fresh air is always to be desired. Exercises should be prescribed to correct and atone for faulty body mechanics and malposture. These factors may lead to imperfect action of the diaphragm, inadequate respiration, inadequate gastro-intestinal function, disturbance of circulation, etc.

Many authors have expressed their appreciation of the use of nonspecific protein injections. Typhoid vaccine intravenously, in small increasing doses seems to be the most popular form of the use of this type of therapy, although other foreign proteins have been used with almost equally good results. Articles on the question of vaccines have been published and republished, with almost as many opinions concerning it as there are writers. There is no doubt but that a large percentage of patients are helped by one or another form of vaccine. The question which arises is: are these patients helped by the nonspecific action of the vaccine, or is there an actual desensitization of the patient to a specific organism by the use of a specific vaccine? If the basal metabolic rate of this type of patient is lowered, small doses of thyroid extract have often given considerable relief. Tonics of various sorts are used. Iron is used for the anemic individual; arsenic is used in the form of Fowler's solution or even given in the form of neosalvarsan intravenously over a short course of treatment.

The use of ortho-iodoxybenzoic acid has increased in the last few years. It is given in the form of the ammonium salt intravenously, or the calcium salt by mouth. It seems to be agreed that the intravenous method is the more effective. Good immediate results have been obtained in a large percentage of cases by most of the men using this method, but relapses have been rather common and more time is necessary to evaluate properly this treatment.

Various forms of gold salts for parenteral injection have been used to some extent, especially on the continent and in England. These gold salts were primarily devised for use in treating tuberculosis, but they have been found to be efficacious in arthritis. Their use has not been extensive enough as yet, however, to advise their use generally.

Various analgesics are always necessary at some time or other in the treatment of arthritis. Of

these, the salicylates are the most effective. Acetyl salicylic acid is usually as effective as sodium salicylate, and is probably more extensively used than any other drug. Various coal tar derivatives are also used, but caution should be urged because of their possible deleterious effect on the blood. Caution is also necessary in the use of cinchophen, which is a very good analgesic, but a dangerous drug if used too continuously.

Combinations of various types of treatment are important, but the patient should not be fatigued by the treatment. It should be remembered that the general health of the patient is of more importance than the local treatment of the affected joints.

Finally, it cannot be too strongly stated that the ultimate answer to the question of arthritis is the recognition of arthritis in the prodromal stage. Much may be done at that time. When arthritis is fully established with bony ankylosis and atrophy little can be expected from medical treatment. In those cases rehabilitation must be done to whatever extent is possible by the orthopedic surgeon.

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#### THE EYE, EAR, NOSE AND THROAT ASPECT OF ARTHRITIS

J. K. VON LACKUM, M.D., Cedar Rapids

I believe the statement can be made that arthritis is probably the most common systemic manifestation of focal infection in man. Representing the eye, ear, nose and throat section, my field is definitely limited to the discovery, evaluation and complete eradication of focal infection in ears, teeth, pharyngeal lymphoid structures and the various nasal accessory sinuses, all of which are proved etiologic factors in arthritis.

In order to appreciate fully our problem we must think of the mechanism involved in focal infection. The laboratory proof of this mechanism by authoritative and competent observers can be set up under two groups:

1. Foci as direct causative factors.
2. Foci lowering general resistance which allow toxic sensitization of the tissues involved.

The former is no doubt correct in tissues adjacent to active foci and the latter when a focus disseminates toxicity to distant structures of the body. Europeans regard our focal teachings with

skepticism, while Americans are known best by their frequent scientific contributions supporting treatment of foci for various systemic diseases. When an upper respiratory focus is suspected in a given case of arthritis, we should employ our utmost diagnostic skill to prove the relationship. At times this requires the consultation of an internist for classification into an infectious type of arthritis, and our complete estimation of bacteriologic, chemical and x-ray findings, together with a conservative clinical analysis of each individual case.

The cure after treatment is generally considered the most convincing evidence that a focus was the source of infection. In the final analysis, however, such an outcome may not be due specifically to eradication of foci but to tonic stimulation resulting from the removal of one cause of lowered resistance. Our failure to effect a cure does not mean that the focus was not the cause, but that secondary changes already established left irreparable damage. Often, therefore, the prognosis depends on an early diagnosis.

A. Otitic infection: I have had no experience in dealing with arthritis from otogenous infection which is given consideration in some monographs. It is my opinion, however, that arthritic metastasis following otogenic sepsis is the least complication to be feared, and of little danger from a prognostic viewpoint. Where no other focus can be demonstrated, a rational treatment consists of raising the patient's resistance by eradicating chronic otorrhea.

B. Dental infection: Arthritis and its relation to dental infection is an alluring subject.<sup>1</sup> Clinical studies by competent authorities have shown that dental infection plays an important part in causation of certain diseases and that the clinical manifestations should be given preference over laboratory findings. From the clinical and pathologic standpoint there are in general three types of lesions to consider:

1. Lesions involving the periapical regions of the tooth resulting from infection following death of the pulp.

2. Lesions involving investment tissues of the tooth, the alveolo-dental periosteum, and the alveolar process not dependent upon death of the pulp, but in which infection starts at the gingival margin. Pyorrhea alveolaris, or more correctly, chronic suppurative alveolo-dental periostitis, is an example.

3. Partly erupted and unerupted teeth with surrounding infected cystic degeneration.

In a report of eight hundred extractions it was found<sup>2</sup> that all types of apical infection are primarily streptococcic, and no one causal organism responsible. With the exception of alveolar abscess none had pain, demonstrating the value of

x-ray. All areas of apical osteitis are infected areas. Rarefied or areas of porosis are the worst and most dangerous because there is no localized resistance as is the case where granulomata are formed. The common germs are streptococcus hemolyticus and streptococcus viridans, excepting in acutely active cases.

For accuracy in diagnosis, prognosis and treatment an x-ray examination is essential. The roentgenologist should interpret the films instead of merely mailing them to the physician. Obviously treatment of numbers one and three is extraction, while in number two it is plausible to try saving teeth for a while at least in the early stages by referring under control for competent scaling treatments. If some improvement is not noted after the first thorough scaling treatment we should insist upon extraction. If tonsils are present in a case of dental infection the focus is never completely removed until subsequent removal of tonsils.

C. Pharyngeal lymphoid structures: (lingual, pharyngeal and faucial tonsils). Since their histology, bacteriology and pathology is so similar, these structures, either individually or collectively, are definite upper respiratory foci. To quote the late Dr. Sluder, "As a possible place of focal infection with systemic manifestation the lingual tonsil should be given as much consideration as the faucial. I have seen it reestablish the systemic condition, rheumatism, for which the faucial tonsils had been enucleated and I have seen that condition relieved by lingual tonsil treatment without removing the faucial tonsils."

Dean<sup>3</sup> calls attention to the fact that rheumatic fever is preceded by infection of the upper respiratory tract and the percentage of recurrences are greatly influenced by our ability to combat these infections successfully. The most commonly associated infection with this condition is chronic tonsillitis. Because the pharyngeal tonsils or adenoids and the remaining defense structures composing Waldeyer's Ring are so closely allied in every respect, they must be given the same important consideration in our efforts to combat focal absorption.

In considering the bacteriology of these structures many authentic observers<sup>4</sup> arrive at the same conclusions:

1. Streptococci isolated from rheumatic tonsils do not differ materially from those isolated from the non-rheumatic type.

2. This absence of difference fits in nicely with the theory that there is no specific streptococcus which is the cause of arthritis but that the condition is due to a hypersensitiveness resulting from repeated small doses of toxins. Thus the bac-



terial antigen is an essential precursor of the allergic state which antedates the arthritic syndrome.

3. Pharyngeal lymphoid structure is but one focus from which these toxins may be absorbed.

Beyond the laboratory means of evaluating such foci a careful clinical examination must be made. The lingual tonsil should be inspected routinely with a laryngeal mirror, or directly if necessary for characteristic evidences of infection; redness, venous congestion, hypertrophy or frank purulent exudates. The nasopharynx and fossa of Rosenmueller cannot be inspected completely for similar clinical evidence without the use of a nasopharyngoscope. The faucial tonsils are the most easily inspected, compressed for exudates, cultured, and studied in detail so far as is necessary to establish their pathology.

The only accepted method of treatment to an end result from our standpoint depends on complete removal of any suspicious tissue. Some operators do not hesitate to remove this tissue during an acute stage of the disease. Experimental proof of immunity production in the body shows the peak to be from three to six weeks following the infection. We should therefore try to reduce the disease to a quiescent state by medical supervision before subjecting the patient to further sensitive toxic absorption. Being mindful of the mechanism involved in focal infection one does not have to establish the historical relationship of the active infection in order to determine a lymphoid focus. Therefore, removal of this tissue in cases of arthritis is no doubt a valuable prophylactic and therapeutic measure.

D. Paranasal sinuses: This classification includes the antra, ethmoids, sphenoids and frontals in the order of their importance as foci. Either one or all of the acute sinus symptoms, that is, temperature, pain, throbbing especially on stooping over, purulent nasal discharges, and neurologic reflexes from the pharyngeal plexus and the nasal ganglia, should call one's attention to a sinus focus.<sup>5</sup> Those sinuses of a silent character are often as active in arthritis as those with severe subjective symptomatology. Unrecognized extensive infection of this character may exist in a patient suffering from chronic arthritis and baffle all efforts to cure the patient until treated and eradicated. Clinical observation of chronic arthritis cases, in which sinus disease is discovered and treated, convinces me of a close relationship between these two diseases. In evaluating sinus foci the x-ray is invaluable not alone for purulent secretions but for the chronic hyperplastic lining membranes. All forms of virulent organisms can be demonstrated in the submucosal tissue. The Proetz<sup>6</sup> displacement method of sinus diagno-

sis is a real step forward, especially in regard to prognosis and the form of treatment necessary for a complete cure.

In the treatment of nasal accessory sinuses the patient is first entitled to conservative care such as physiologic ventilation, adjustment of metabolic physiology, balanced food assimilation, and change in climate if economically possible. If proper care under such circumstances does not cure the sinus, radical measures are justified. Proper treatment of these rhinologic conditions has in many instances aided materially in the clinical cure of acute and chronic arthritis; and I believe no case has ever been observed in which competent and careful sinus treatment has produced any ill effects upon the patient's arthritis.

In analyzing my first 6,000 office admissions, I wish to report that 114 patients came in with a primary entrance complaint of one or more arthritic symptoms. In other words, the incidence of arthritis in my practice has been practically two per cent. The youngest was nine years of age, and the oldest sixty-nine; the average age of the group was 36.4 years; fifty-two were males and sixty-two were females. There was a definite family history in only fifteen cases. Only three were free of demonstrable upper respiratory foci. Eighty-five returned for complete focal treatments, including surgery; twenty-six had no treatment in my office. The foci found were as follows: tonsils, or tonsils and adenoids combined, seventy-three; tonsils and teeth combined, nineteen; sinuses, eight; teeth, six; tonsil stumps or nodes, four; and adenoids alone in one case. There was multiple joint involvement in one hundred, and single involvement in fourteen cases. The result of the treatment was: 56 per cent, no recurrent symptoms; 30 per cent, less than a 50 per cent cure; and 16 per cent, little or no help. Fifty-two patients had their symptoms one year or less, twenty-seven had them two years or less, fifteen had them five years or less, and eleven had them over five years. The oldest patient had symptoms for twenty years, and the youngest for three weeks.

In conclusion, the eye, ear, nose and throat specialist should only deal with the infectious arthritic group which I consider a systemic manifestation of focal infection, and until we have more to offer, removal of all active foci should be considered imperative treatment.

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#### THE ORTHOPEDIC PHASE OF ARTHRITIS

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It is with some trepidation that I come before you this morning to discuss this subject in the time allotted. I apologize also in offering you nothing new and will be content with a general and somewhat hurried review of the surgical treatment of arthritis. You will also pardon me if I do not deal with the questions of etiology, and we cannot in this brief time differentiate much between acute and chronic arthritis or the enormous group which falls between these classes. It is obvious that surgical treatment must vary considerably as to the cause, the patient's age, his general well-being, his occupation, etc. These are all questions of the utmost importance but questions which we do not have time to consider this morning.

The surgical treatment of arthritis may for convenience be divided as Caesar's Gaul into three main divisions. First, the prevention of deformity; second, the correction of already developed deformities, and third, the restoration of function to disabled joints.

It is apparent that in arthritis as in other abnormal conditions prevention is better than cure; that means insofar as possible the prevention of deformities. It has been for many years axiomatic that joint infections or injuries should be dressed in that position in which if stiffness of the joint ensues the greatest possible usefulness will be retained. It is also axiomatic that inflamed tissue is more likely to minimize loss of function if it is put at rest. So far as arthritis is concerned this means that joints which are involved with acute inflammation should theoretically be cast or splinted in that position in which a stiff joint will be somewhat useful; that is, with the wrist in slight dorsal flexion, the elbow in mid flexion, the shoulder in mid abduction, the knee in extension, etc.

We all know that in spite of these theoretic considerations, practical circumstances oftentimes make such a regime impossible. We have all seen the acutely inflamed wrist held in anterior flexion whose slightest movement is accompanied by terrific pain. It is impossible for the patient to allow us to place this wrist in dorsal flexion. We have all seen knees acutely inflamed held in severe

flexion in which it is impossible to straighten the joint and dress it in extension. We have also seen many cases where patients did not consult us until well marked deformities had developed, so that in spite of the theoretically ideal prevention of deformities we will many times see deformities of wrists, of fingers, of knees and of hips, etc., which present themselves to us as problems of correction. Therefore the surgeon's task in spite of the best prophylactic measures oftentimes consists of correcting deformities and in restoring function to crippled joints. It is a general rule which admits of no exceptions that active surgical measures should not be carried out in the presence of acute infection; that is, we consider it ill-advised to attempt to correct a flexion contracture of the knee in the presence of acute gonorrheal arthritis, or the correction of a flexion deformity of the hip in the presence of a destructive arthritis of this joint. Our effort here until the subsidence of the acute infection must be a prophylactic one, the prevention of further deformity, or the most gradual correction of the position of the joint. Consequently the true surgical treatment of arthritis must be limited to the chronic low grade arthritis or the acute arthritides which are in a quiescent stage with disability.

The correction of arthritic deformities must arbitrarily be divided into conservative and radical methods. The conservative method consists of making a slow correction by the use of hinged casts, splints and braces, elastic traction, etc., together with the usual physiotherapeutic measures of massage, diathermy, external heat of various types, etc. So-called Brisement force is usually classified as conservative but it is really quite radical, and is attended by considerable danger especially of producing fatty emboli. Further, under most circumstances the ultimate result following such force is far from satisfactory, because adhesions when they are forcibly torn are likely to reform even firmer than previously, and the resulting scar tissue will have the same tendency as scar tissue elsewhere to contract so that deformity is likely to return. Therefore, we may for practical purposes say that conservative treatment of arthritic contractures and the conservative mobilization of ankylosed joints must be done gradually by the use of weights, hinged casts, hinged braces, elastic traction, etc., as above mentioned. I will not take time to mention these different methods with which you are all familiar. One of the more common contractures is contracture of the knee. The type of apparatus shown here (Fig. 1) is typical of most, and while hinged casts, splints, etc., are made in different styles the underlying principle is the



same. These corrections are accompanied by pain and certainly should not be done rapidly for here again if adhesions are torn instead of stretched recurrence of the deformity is likely. Contracture of the wrist in flexion and of the fingers with the phalangeal metacarpal joints in extension is another common deformity. Turnbuckle splints extending from the distal ends of the metacarpal

well visualized; and it will be discussed in somewhat more detail later.

Arthroplasty or the complete rebuilding of disabled joints has been practiced for many years. The indications for arthroplasty are fairly definite. Needless to say surgical attack of this type should never be carried out in the presence of acute or chronic inflammation, the usual rule being that at least six months must elapse between the subsidence of the acute joint condition and operation. There are also other factors which should be considered in making a decision as to whether arthroplasty or fusion should be done on a given joint, depending on numerous personal considera-

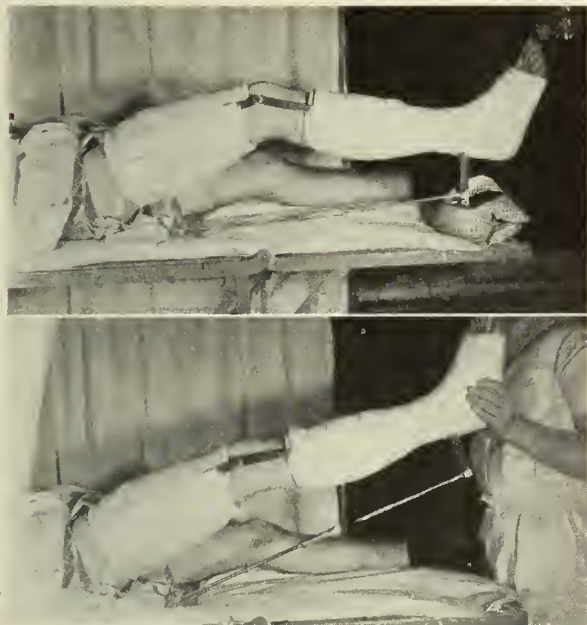


Fig. 1. Turnbuckle cast for knee contractures

joints to the elbow are useful here and we prefer to straighten the contracture of the wrist to a straight line before applying elastic traction to the hyper-extended fingers. After the flexion contracture of the wrist is partially overcome extension can be applied to the wrist and fingers simultaneously (Fig. 2). Some of these contractures are extremely stubborn and require extension in two or three different planes at the same time. After the hand and finger contractures have been overcome it is usually necessary to wear for many months a splint of the banjo type with Japanese finger traps which may be removed and put on by the patient or by the physiotherapist, and of course also the use of corrective exercises such as rolling rubber balls, weaving, etc. One could proceed to other joints but the principles of treatment are the same and nothing would be gained by repetition.

Next we come to the restoration of function to disabled joints by open surgical attack. Those in most common use are first, synovectomy; second, arthroplasty; and third, fusion. Synovectomy while it has been used many years has not been well understood; its indications have not been



Fig. 2. Turnbuckle splint with Japanese finger traps for hand and finger deformities

tions. For instance, a laboring man or a farmer with one stiff knee in a good position, perfectly solid with freely movable hips, and a freely movable opposite knee is probably better treated by fusion than by arthroplasty because a stiff knee is stable and painless and he will manage very well in walking. On the other hand a stenographer with a stiff knee, if there are no contraindications, should probably be subjected to an arthroplasty.

because a stiff, straight knee in her occupation is a real handicap. To carry the correlation further, a patient with two stiff hip joints, engaged in any occupation, should probably be subjected to an arthroplasty at least on one side, for with two stiff hips the patient is badly crippled. Instances like this might be multiplied. The joint involved also makes a difference as to whether arthroplasty is indicated or not. In the shoulder joint arthro-

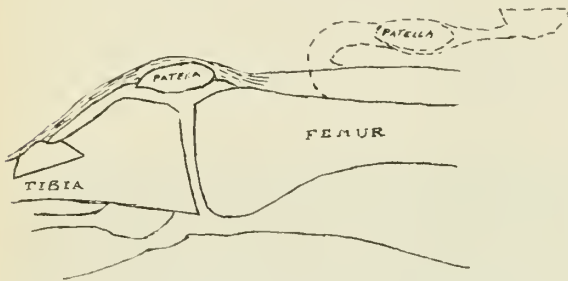


Fig. 3. Bone block detachment of the patellar tendon for arthroplasty of the knee.

plasty seldom needs to be done because of the tremendous mobility which the scapula can develop after the shoulder joint is stiff. On the contrary arthroplasty of the elbow should probably be done often because a stiff elbow joint even if it is in a good position is a distinct handicap to the individual especially if he has to use his hands a great deal. On the other hand arthroplasty of the wrist, while it can be done with a reasonable degree of success, is usually unnecessary because a stiff wrist in a useful position is not disabling. Ankylosis of the hip, especially if the knee on the same side or either hip or knee on the opposite side are involved, should usually be undertaken and can be with considerable optimism because the mechanical construction of the joint is such that one has no fear of an unstable joint following arthroplasty. In all joints thus far mentioned the problem of arthroplasty is mainly one of movement. The technical advances in the operation of arthroplasty of the elbow, wrist and hip in recent years has been slight although important. It has been found that arthroplasty of these joints should be rather radical, that the most likely error to be committed is the removal of insufficient bone. It has become increasingly evident that large amounts of bone should be removed, that the removal of large amounts of bone is much more important than the mechanical restoration of the joint surface. By this it is not meant that one should not make every effort to restore as nearly as possible the contour of the joint to those contours which normally exist, but in neither the elbow, the wrist nor the hip is lateral stability of importance. Since the arm is a non-weight-bearing extremity if some

side play exists in the elbow after arthroplasty it is of no appreciable consequence; since the hip is a ball and socket joint and there is no tendency to dislocation following arthroplasty, the removal of a large amount of bone does not result in instability and hip arthroplasty is usually successful if sufficient bone is removed. Arthroplasty of the knee, however, presents a different mechanical problem because a stiff painless knee in a good position is much more useful than a knee which moves but is unstable laterally. One is caught here between the two horns of a dilemma. On the one hand if sufficient bone is not removed movement will not be restored, and on the other hand if too much bone is removed motion will be restored but lateral instability will result.

Noticeable advances have been made in the past few years in the technical details of knee arthroplasty. The first is that of incision. In most joint work it is desirable for the incision through the skin and the incision through the underlying tissues to fall in different planes. Therefore, the incision most used in recent years is of the goblet type with the skin incision lying far from the



Fig. 4. Arthroplasty of the knee showing the one condyle method.

bone and joint incision and a consequent lessened likelihood of postoperative infection or adhesions. For the same reason many operators prefer to take the fascial flap which is interposed in the new joint from the opposite thigh rather than from the same thigh. Another marked advantage which has been recently described is in the treatment of the patella. Movement must be started early in arthroplasty. If the quadriceps tendon has been cut above the patella and re-sutured, this line of



cleavage will not stand much stress for some weeks, and in starting movement against muscles which are always spastic or stiff many times the muscle incision breaks down and causes disaster, and of course in making such an incision scar tissue is formed in gliding tissue which also has a tendency to delay or inhibit movement. Therefore the method of disposing of the patella in general use the last three or four years consists of cutting a wedge of bone out of the upper end

two depressions of the plateau of the tibia. This arrangement is extremely difficult to reconstruct and it has been found desirable to reconstruct the knee, making one quite convex condyle and one



Fig. 5. Double albee lumbosacral fusion for chronic arthritis.

of the tibia obliquely where the patellar tendon inserts (Fig. 3). The segment of bone with the patellar tendon attached is then slid out laterally and after the operation is completed is slid back in and held with a suture. It can be seen that the obliqueness of the bone incision prevents the fragment from being displaced and considerable force can be applied almost at once on the patellar tendon without fear of damaging its integrity. The third advantage consists in the way the articular mechanism is rebuilt. Knee joints consist normally of two condyles of the femur which engage with

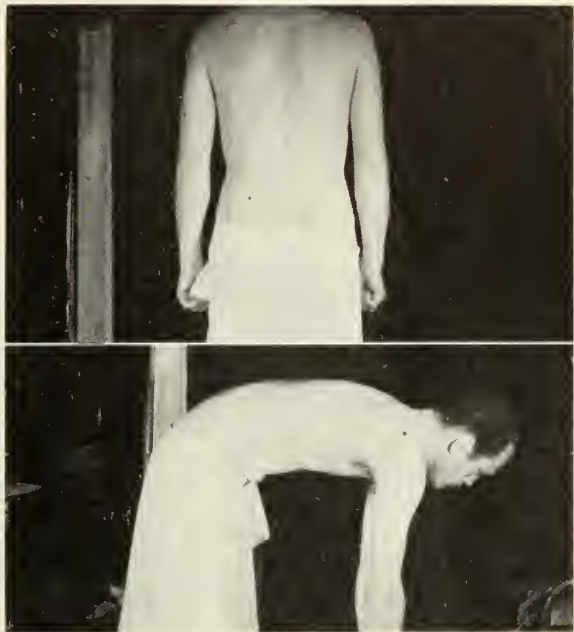


Fig. 6. Incision and final result lumbosacral fusion.

deep socket rather than two (Fig. 4). This results in no increased instability and a very much greater likelihood of movement. The operation of knee arthroplasty should be carefully consid-

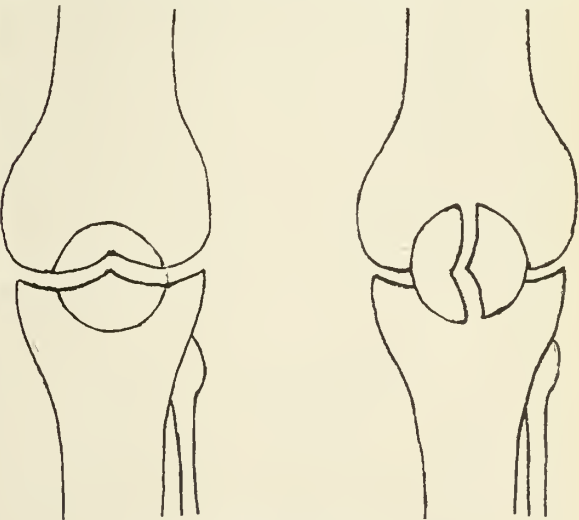


Fig. 7. Osteoplastic knee fusion. (Roeren-Milgram)

ered before it is advised, because failures here are more common than they are in other joints. Restoration of function and relief of pain in arthritic joints by surgical fusion is a problem

which must be weighed even more carefully than that of arthroplasty, for once fusion is done there can be no retreat nor can any other measure be used later. It is evident that a stiff but painless joint is more useful than a partially movable but painful one, and if this were the only consideration fusion operations would be resorted to frequently. However, while one stiff joint is not such a tragedy many stiff joints are. Therefore, fusions have to be limited to intractable disabilities in one or two joints when one has excellent reasons for thinking that other joints will not

become involved, and then only when the usual conservative or even radical measures have failed to bring relief. For practical purposes then fusion is limited to few joints in the body out of the many which may become arthritic. Recently lumbosacral fusion for low grade and disabling lumbosacral arthritis has been carried out with marked success. The operation, usually a combination of the Hibbs and Albee types, either with or without enlarging the vertebral foramina or destroying the articular facets, brings striking relief to low back disability caused by low grade arthritis which is

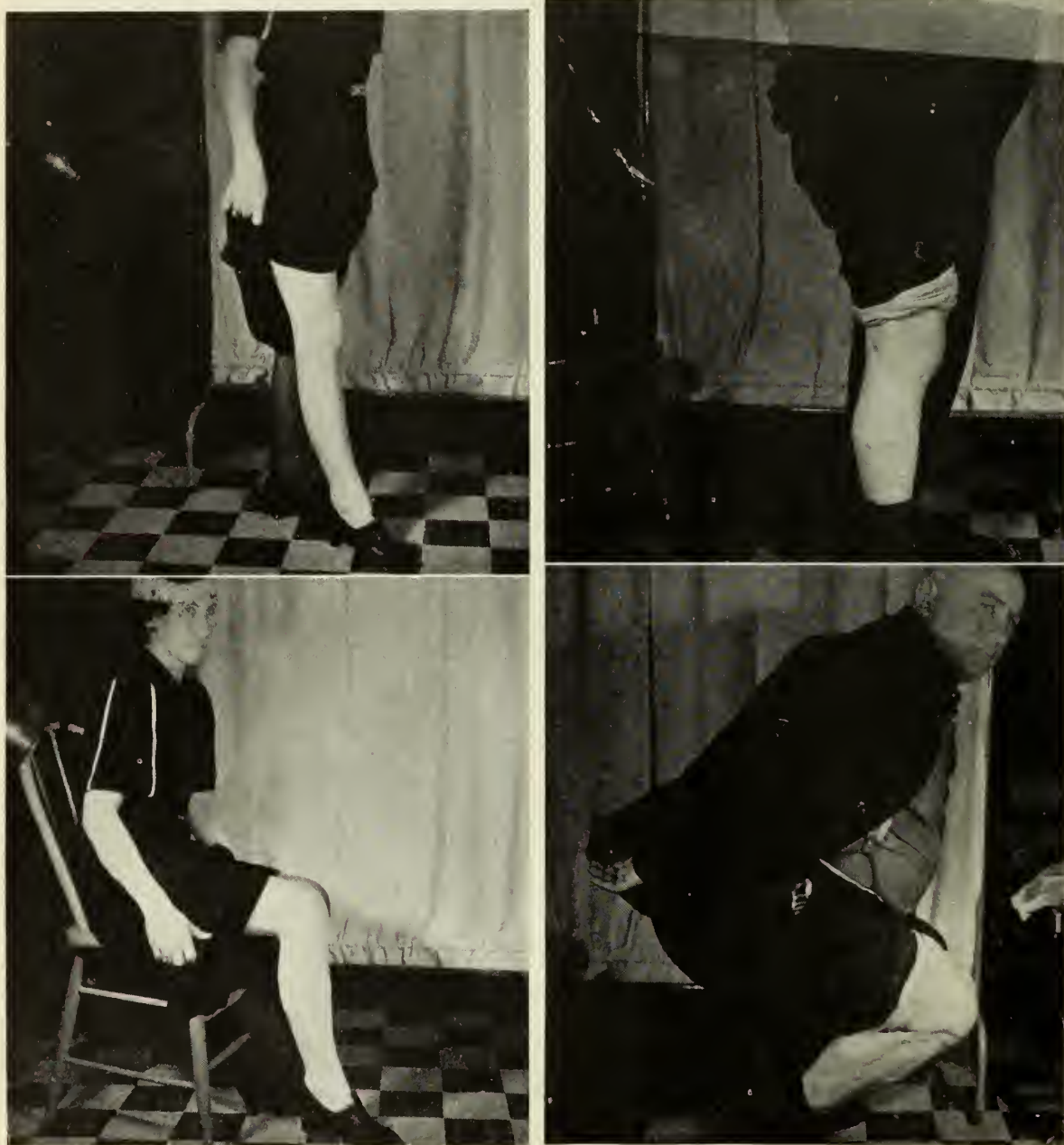


Fig. 8. Range of movement following radical synovectomy.



common here because of the unstable mechanical arrangement of this joint (Fig. 5), and the relief of pain and restoration of function is oftentimes quite striking, provided that the indication for fusion was definite (Fig. 6). The same is true of the sacro-iliac joint. Fusion of this joint by the Campbell or Smith-Peterson method, in the presence of arthritis which can be definitely limited to the sacro-iliac joint, gives dramatic cures of disability of many years' standing, but again the diagnosis must be accurate and the indications well founded. Fusion operations in low back disabilities have been resorted to with increasing frequency in the last years and will probably be used with even increasing frequency in the future. Extra-articular fusion of the hip is occasionally used for severe osteo-arthritis. However, its usefulness is limited and the indications for it are rare because it is seldom that one joint alone is involved in such a process and while one stiff hip is tolerable two stiff hips or a stiff hip and a

stiff knee are extremely crippling. Fusion of the knee must also be used with care for the same reasons, that while one stiff painless knee is better than a movable sore one it is seldom that the involvement limits itself to one joint. The ingenious method of knee fusion described by Roeren<sup>1</sup> and modified by Milgram<sup>2</sup> is safe and efficient, but can of course be used only in knees in which a free bone transplant could be used (Fig. 7).

To return to the subject of synovectomy which after being described fifty years ago as a treatment for tuberculous synovitis was found impractical and discarded for many years. The credit for its revival should probably go to Ellis Jones<sup>3</sup> who some ten years ago again started using it in chronic synovitis and osteo-arthritis of the knee, reporting a series of cases in 1923. Since that time the operation has become increasingly popular. We cannot describe the pathologic picture of chronic arthritis here, but it is generally accepted



Fig. 9. Steps in the operation of synovectomy.

by most pathologists that most of the pain and much of the stiffness in arthritis results from the inflamed, hypertrophied, synovial membrane rather than from erosion of the articular cartilage. If this thickened synovia, together with the lipped edges of the arthritic bone surfaces is removed, it is oftentimes amazing how much comfort can be obtained and it is also surprising to the surgeon to open one of these knees later for some other reason and see how normal the newly formed synovia appears. The operation looks radical. It should of course never be used in progressive arthritis. It cannot be used successfully in arthritis in which the articular cartilages are completely eroded but, I think it should be used more often than it is because the relief of pain and disability is marked. It is rather unusual for a complete restoration of movement to take place after this operation although it occasionally occurs. It is usual, however, to have 90 degrees movement without pain (Fig. 8). The operation looks somewhat more radical than it really is. The goblet approach is best used for the same reasons that it is in arthroplasty (Fig. 9). The knee joint is approached by splitting the patella lengthwise somewhat to its inner side. The patellar tendon and the quadriceps tendon are readily split and then, by everting the split patella, complete access to the knee joint, both anterior and posterior compartments, is obtained. The synovial membrane is completely dissected off, both internal and external semilunar cartilages are removed and with a rongeur the roughened lipped edges of the lower end of the femur are smoothly and cleanly removed. Bleeding is controlled and the joint closed without drainage if oozing does not seem imminent. Movement is started passively on the second day, and actively at the end of four or five days. The patient is encouraged to walk in ten to fourteen days and comfort steadily increases as the trauma of the operation subsides.

#### SUMMARY

1. Much can be done surgically for the relief of quiescent and chronic arthritis.
2. Radical synovectomy offers a useful and function-restoring attack on selected knee arthritides.
3. Arthroplasty offers an increasingly good prognosis in quiescent arthritis with complete ankylosis.

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#### Discussion

Dr. M. B. Call, Greene: We have heard three excellent papers on this timely and important subject. The subject has been adequately handled from the three different standpoints so there is little to be said in the way of discussion, except to review and repeat some of the things that have already been said.

Arthritis has been a challenge to the medical profession for a long, long time, and the challenge has been taken up by physicians the world over. The British, in organizing the International Committee for the Study of Rheumatism, started the campaign, and there has been considerable progress. The simplified classification is a step in the right direction. Remember that two hundred years ago William Cullen classified thirty-four different types of chronic arthritis. It has now been reduced to two, so we have a working basis to begin on. I doubt if anyone is willing to say that he knows what arthritis is or what causes it. There are a great many factors. Focal infection has been established as an important factor. The streptococcus is no longer considered as important as it was a few years ago. When enthusiastic investigators found the streptococcus, one of the fifty-seven varieties, in fifteen per cent of their arthritic cases they thought the streptococcus must be a causative agent. Later, when pathologists found the same percentage of streptococci in non-arthritic cases, the evidence was less conclusive.

In arthritis we have much evidence, but little proof. Metabolic imbalance, lack of vitamins, climatic changes, focal infections, occupations, stress and strain—all of those things are factors; but until more work has been done, it is going to be a little difficult to say that one is more important than the other. Insofar as the two types are concerned, I doubt if anyone is ready at this time to say that he is sure they are not two stages of the same condition. One type is more common before forty and the other is more common after forty; one type occurs in this finger, the other occurs in this finger, of the same patient. It is very hard to say that they are two distinct and separate entities. It seems more logical to consider them as two stages of the same condition.

In regard to treatment, of course, the removal of foci is important. Whether the bacteria or the toxins are at fault, whether it is an infection of a joint or an allergic condition of a joint, makes no difference. Removal of the foci of infection is an established therapeutic measure. The results from vaccines seem to depend largely upon the enthusiasm of the man using them. One man gets wonderful results; the next man gets indifferent results. One investigator finds that he can get bacteria from an inflamed joint; another one is unable to get bacteria. We must eliminate the personal element in some of these things.

Everything under the sun has probably been used for chronic arthritis, every new thing that comes up. Of course, the salicylates still hold their place; but as the coal tar derivatives came in, they were used, and the barbituric acid derivatives were used. When



the vitamins were first discovered, they were naturally used. If something comes along that we have not yet heard of, it will be used in arthritis. There is one thing we must not forget, and that is we must treat the patient instead of the disease and not forget the most important of all our therapeutic measures in every condition, and that is rest. I doubt if there is any single therapeutic measure that has the importance of rest.

The orthopedic treatment should receive more attention than it has heretofore. We have been concentrating on the removal of foci, taking out bushels of tonsils and teeth, and sometimes the patient becomes better and sometimes he does not, but we are forgetting rest and the orthopedic treatment.

**Dr. W. Eugene Wolcott, Des Moines:** For many years in our orthopedic practice we have contacted problem cases of arthritis. Some of these were seen in the advanced stage and some earlier. Up until a few years ago, we did not feel that we had anything to offer this type of patient, beyond symptomatic relief of a temporary nature. Usually, these patients have had their foci of infection removed, they have all had long courses of salicylates, which seem to constitute the ordinary routine treatment as applied by the profession.

About three years ago our attention was called to some work on arthritis by a specialist in London. His book was secured and his reports therein obtained were difficult to believe, since his results following the use of vaccine were entirely different from those experienced by us. However, some of his vaccine was secured and we began to follow his modern method which was the administration of minimal rather than large doses, avoiding all reactions insofar as possible.

Following such a course of treatment, we began to get results, particularly in the rheumatoid type of chronic arthritis. This prompted a visit to the London Clinic where we could study at first hand his method of treatment and learn, if possible, wherein our shortcomings might be. On the occasion of this visit, we found that we were still giving too large doses of vaccine. This was particularly true in the more extensive and acute cases. In such instances very minute doses were used in the Charter House Clinics.

I wish to differ slightly with the first discussor of this subject because I believe it is generally admitted that streptococci of many different types, innumerable types in fact, do produce the rheumatoid type of arthritis. In all probability, there is no question about this fact. Therefore, if infection is the causal factor, proper vaccine therapy should be indicated.

Something has been said about the eradication of focal infection, particularly in the nasal sinuses. It would seem to me an almost impossible feat to remove such a focus of infection, since there is a large area of chronically inflamed tissue which cannot be entirely reached by treatment or removed. In such instances, it would seem that we must rely upon vaccines which are more or less specific to build up

the general condition of such patients. We must not forget, however, that all of these chronic arthritic patients are in a debilitated condition; practically all have developed secondary anemia and many of them have lost materially in weight.

My conception of the proper treatment of arthritis is that proper attention be given to the building up of the general health of the patient, and the use of vaccine; particular attention should be given to a nutritive diet, rich in vitamins, with the carbohydrate intake considerably limited.

By following such a regime over a period of the last three or four years at the Broadlawns General Hospital Arthritis Clinic, we have been able to secure very satisfactory results; at least they are far superior to what we have been able to secure by any other method of treatment.

Insofar as salicylates are concerned, we think we have a right to regard them as useless as a curative measure in chronic rheumatoid arthritis. They are, however, specific for the acute rheumatic fever case.

Chronic arthritis is not a hopeless disease and its diagnosis and treatment merit the most serious consideration of every general practitioner.

**Dr. Parsons (closing):** These discussions have been very pertinent. I agree with everybody that orthopedic treatment of these people who have chronic arthritides is and should be important, but there is a large number of people who have arthritis. In my estimation, a lot of that is water over the dam. If we can keep these patients comfortable, that is as much as we will be able to do. As I tried to show in my paper, this question of arthritis is a very big one. The incidence is high; it is much more than heart disease, much greater than any of the other common diseases. If we can do something as general practitioners, as internists, to keep these people from getting arthritis, then we have done something. The only way we can do this is to recognize the condition in its prodromal stage, which is the thing I have tried to stress. There are certain prodromal symptoms, and they are recognizable. If we can recognize them, we will not have such a high incidence of arthritis.

I would recommend to you the little pamphlet which has been published by the American Committee for the Control of Rheumatism, through the American Medical Association. It is a compilation of an exhibit which was given at Milwaukee, is very brief, and is called "The Exhibit on Rheumatism." This booklet can be purchased from the American Medical Association for fifteen cents, and it has a condensed but very good outline of causes and treatment of arthritis. It is not a big book for which you pay a lot of money, but it contains all the pertinent facts. I really recommend it to you.

**Dr. von Lackum (closing):** I think Dr. Parson's discussion stole my thunder. To recall my paper, it dealt entirely, in the statistical light, with the early stages. Since I am a young doctor, my cases had an average duration of two years. I think that prob-

ably accounts for what I might call my results of 56 per cent cure. It is a matter of prevention.

Last year, at the University Hospital at Iowa City, Dr. Bennett of Johns Hopkins University, presented a very masterful joint presentation on arthritis. He demonstrated definitely on a large series of cases that all of us, after forty years of age, are going to have a more or less chronic change in our joints, microscopic and gross.

Our success in getting over this early period of middle life, is going to depend entirely on whether or not we keep these changes from becoming gross. If they do not become gross, the chances are that we will walk without crutches. If we can prevent the constant absorption which stimulates this process in creating the rheumatic or arthritic syndrome, we will have accomplished a great deal.

Sinus treatment seems to be the hobby that everybody rides. Much radical surgery has been done; I would say too much. When these sinus membranes become hyperplastic, there is only one sinus and that is the antrum, which can be entirely eliminated by submucous resection. Dr. Potts at Omaha has done a great amount of work in this type of surgery, and that is a limited way of choosing his patients. He cannot attack the entire nose. Therefore, I do not believe that it offers the last word as far as a final cure of the sinuses is concerned.

Dr. Wolcott spoke of vaccine. Of course, that is the only thing we have to offer; the ventilation of the sinuses, and then the vaccine treatment to continue the neutralization of these absorbed toxins which produce the sensitization.

Dr. O'Donoghue (closing): The synovectomy is an operation which probably is not used as much as it should be. In chronic osteo-arthritis of the knee, the patient's difficulty is not so much the stiffness of the joint as the pain which accompanies this stiffness. If a patient is able to move a knee-joint forty-five degrees, painlessly, he is happy.

The patella can be split lengthwise on its inner side or dissected around and thrown over. We prefer the split. The operation, of course, should be done under a tourniquet. By everting the patella, the entire knee-joint is under your eyes. Both the anterior and posterior parts can be inspected and cleaned out.

### COLLES' FRACTURE\*

DOUGLAS N. GIBSON, M.D., Des Moines

Colles' fracture was first described in the medical literature in *The Edinburgh Medical and Surgical Journal* in the year 1814. In an article "On the Fracture of the Carpal Extremity of the Radius," A. Colles, M.D., a professor of anatomy and surgery at the Royal College of Surgeons of Ireland, described the common accidental injury which still bears his name. His description of the condition is regarded as classical, and little except various methods of treatment and finer differentia-

tions of pathology has been added since the original article.

### ANATOMY

To appreciate fully the problems of Colles' fracture which is the most common of all fractures, knowledge of the anatomy of the wrist is essential. The radiocarpal joint is condyloid. Entering into its formation are the lower end of the radius, the distal surface of the articular disk between the radius and the ulna, and the carpal scaphoid, semilunar and cuneiform bones. The distal radio-ulnar joint does not communicate with the wrist joint proper. It is a true trichoid joint in itself. The carpal bones fit into the elliptical and concave surface of the forearm elements. The articular surfaces of all these bones are covered with cartilage and the joint is surrounded by a strong capsular ligament. This is a much used joint, and dorsal and volar radiocarpal ligaments and radial and ulnar collateral ligaments are furnished to aid in its stability. The position of insertion of these ligaments into the forearm bones is not at the articular edge, but they are attached to the bones for a distance upward of about one centimeter. This anatomic structure explains in part the pathology found in Colles' fracture. The extensor and flexor tendons help to strengthen the joint. The volar ligaments are the more powerful. This is a natural adaptation since they must bear a greater stress in use. All of the carpal bones are bound together by complex ligamentous structures, and the spaces between them are true arthrodial joints. The normal anatomic relations of the radius and ulna must also be appreciated. The styloid process of the radius is normally situated on a plane about one centimeter distal to that of the ulna. This is duly stressed in all teachings, but a point not stressed sufficiently is the normal position of the plane of the lower end of the articular surface of the radius in relation to the shaft of the bone. This surface forms an angle of about 80 degrees with the line of the shaft and points volarward. This must be appreciated to insure complete reduction of a Colles' fracture.

### MECHANISM AND PATHOLOGY

The most common cause of Colles' fracture is a fall on the outstretched hand. Elderly people sustain this type of fracture rather easily. In young adults a relatively severe fall is usually required to break the wrist. The greater proportion of these fractures in the aged are comminuted and impacted. In children epiphyseal separation is common. The mechanism that produces this fracture is as follows: a fall on the outstretched hand occurs; the whole body impetus pushes against the floor or ground through the forearm,

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carpus and palm; the hand is hyperextended to its utmost capacity; the flexor tendons crossing the wrist are tightly contracted; the strong reinforcing ligaments around the carpus do not tear; and the force of the fall is transmitted to the radius just at or above the insertion of the ligaments. The result is that the bone gives at this point and the lower end is torn off. • Continuance of the force causes dorsal displacement and rotation of the fragment. If the force is further continued, the hand is deviated radially and the force is transmitted to the ulnar collateral ligament which is attached to the ulnar styloid. This ligament resists tearing and the ulnar styloid is fractured and displaced radially. At any time the force may be so directed as to cause impaction. The forces causing the fracture may be variously directed and interrupted at any time, and may cause variations in degrees of pathology. As a rule nerves, ligaments and tendons are rarely injured, but such disturbances should be sought for in every case. Direct trauma from the fall and stretching of tendons produces a tenosynovitis. Hemorrhage into the fingers and forearm occurs early, but is not manifested by ecchymosis until the fourth or fifth day after the injury. The blood must be absorbed and this process results in swelling and consequent edema of the fingers and hand. Median nerve injury is rare and when discovered a week or so after the injury there is always the question as to what actually caused it—the injury or the splint.

#### SIGNS AND SYMPTOMS

The clinical picture of a Colles' fracture is familiar to all of you, namely, the "silver fork" deformity. This is caused by the dorsal displacement and rotation of the lower fragment of the radius. The overlying soft tissues and the swelling give it a rounded appearance. On the volar surface of the forearm there is a similar deformity present, caused by the prominence of the lower end of the upper fragment of the radius and the overlying soft tissues. Further inspection reveals a shortening of the radial side of the forearm with radial deflection of the hand and prominence of the ulnar styloid. The patient is loath to have the arm or hand touched. The injured member is carried in the well hand, the wrist gently grasped by the fingers and thumb to steady the fragments in a position of slight extension. The fingers of the injured member are usually flexed over the edge of the supporting hand. Motions of the fingers are weak and painful and become increasingly so the longer the acute fracture remains unreduced. On palpation the bony mass of the lower fragment is felt to comprise the lump of the deformity, dorsally. Severe pain is usually complained of

when pressure is applied over this point. If the rubber-tipped end of a pencil is used to apply pressure over the bone, a constant line of tenderness extending across the wrist can be demonstrated by repeated trials. This corresponds to the site of the line of fracture of the bone. This examination is an important clinical diagnostic point when fracture is suspected in any bone. If the ulnar styloid is broken, a constant point of tenderness can also be demonstrated over the fracture line of this bone. If extreme care is used the styloid processes of the radius and ulna can be palpated. One finds that this process of the radius has assumed a position on the same plane with that of the ulna or is at a higher level. Crepitus cannot be elicited in this type of fracture.

Various degrees of the above symptoms and signs are produced by varying degrees of pathology. As a general rule elderly people and children complain less of pain than young adults. This may be explained by the fact that fractures in elderly people are usually impacted, and the lesions in children are usually those of slight epiphyseal separation. When the fragments are not greatly displaced, the marked deformity as above described does not occur and the whole picture is moderated to correspond to the lesion.

#### X-RAY

An x-ray in anteroposterior and lateral planes should be taken for fracture in every suspected case. If in a suspected Colles' fracture the diagnosis is confirmed by x-ray, one should note the type of fracture, especially as regards displacement, relation of the styloid processes, the plane of the articular surface in relation to the shaft, comminution and impaction. Injury to the carpal bones should always be looked for. It is with this thorough knowledge of the condition that the correct prognosis can be given and the proper treatment instituted. I hope it is needless to urge that an x-ray be taken after reduction for your own protection as well as that of the patient.

#### PROGNOSIS

The prognosis after Colles' fracture depends on several factors, chief among which is proper reduction. If the lower fragment of the radius is not replaced so that the normal axial relationships of the bone are restored, the deformity will persist. This deformity leads to radial shortening, impaired wrist movements, changes in tendon relations, increased and prolonged swelling of the hand and fingers, and lasting weakness in the function of the hand. The age of the patient also has a bearing on the prognosis. Adolescents quickly conquer disability arising from deformity, and the end re-

sults are near perfection in function, even if a residual deformity remains. A guarded prognosis must be kept in mind in the cases of epiphyseal separation. In this type a disturbance in growth of the radius may occur resulting either in shortening or an overgrowth. Fortunately, this is not common. Adults require a longer time for functional return than do adolescents. They also overcome residual deformities, not by pliability of tissues but by functional adaptation. The aged offer the poorest prognosis. They suffer the comminuted and impacted types which cause actual loss of bony substance. They do not tolerate splinting well, and any swelling, hemorrhage or circulatory disturbance causes long standing functional interference in the wrist, hand and fingers, which may become permanent. If proper measures are instituted the result is usually an imperfect, but useful hand and wrist.

#### TREATMENT

The treatment of Colles' fracture requires more effort and time than the mere reduction of the displaced fragments. The after-care is of paramount importance if the ideal end result is to be realized. Reduction should be performed as soon as possible after the injury. Approximation of fragments is accomplished with less difficulty if done early, and circulatory disturbances are much less likely to occur. Manipulation should be carried out with the aid of a fluoroscope whenever possible, because completeness of reduction can be visualized. An anesthetic of some type is essential, the choice of which will be governed by the surgeon. More relaxation can be obtained by using a general anesthetic, but local anesthesia can be used.

The technic of reduction is a personal matter. A procedure which I have used is as follows: the lower end of the forearm is grasped by one hand, the thumb being placed dorsally over the radius just above the line of fracture; the lower fragment is grasped in a similar manner below the line of fracture; the deformity is increased by dorsiflexing the wrist; strong traction is then applied on the lower fragment and, by a circular motion, the hand is brought into a position of extreme palmar flexion, ulnar adduction and the forearm completely pronated. If comminution is present the fragments are then molded into place. After the manipulation the completeness of the reduction can be visualized by the use of the fluoroscope. Clinical tests for completeness of reduction are the ability of the injured wrist to hand laxly in the position of the palmar flexion, the disappearance of the silver fork deformity, and the normal restoration of the relationship of the styloid processes. When one is satisfied that the reduction is

complete, a splint is applied. Plaster of paris is preferable because of its adaptability. With the wrist in the reduced position the forearm and hand are encircled with a single layer of sheet wadding. A plaster of paris reverse long enough to extend from the elbow to the knuckles is cut out to allow freedom of the thumb. The plaster must be wide enough to encircle almost completely the radius and also allow for a plaster flange to extend around the metacarpal of the index finger. This is applied as a dorsal splint and held in place by gauze or flannel bandage, or an encircling bandage of plaster of paris, with the splint molded to conform to the curves of the extremity. The plaster is allowed to harden and then trimmed so it will not interfere with function at the elbow or metacarpo-phalangeal joints. If plaster of paris is used as an encircling bandage it is split longitudinally to allow for swelling. A post reduction x-ray is then taken.

The patient is allowed to go home as soon as advisable. Sedatives are supplied and instructions are given to keep the arm elevated. Great stress is made of the fact that the fingers and thumb must be kept moving and massaged gently in an upward direction. With diligence on the part of the patient in doing this, the swelling will be almost negligible. If swelling does occur, the fingers become more difficult to move, and pain becomes progressively more severe, the splint should be loosened immediately. Constriction will cause irreparable damage in the function of the hand in a very short time.

The clinical picture should guide the surgeon in the after-care. The length of time for splinting depends upon several factors. Persistent swelling is an indication for early physiotherapy. In elderly people physiotherapy should be started early. The simple transverse Colles' fracture without comminution need be splinted for only ten days or two weeks. The tendency to recurrence of deformity in this type is negligible. The comminuted and oblique types of fracture should be kept splinted for a period of three or four weeks. If support is removed too soon in these types, radial shortening may occur. Early physiotherapy should not be entrusted to the patient or a novice. The surgeon or an able assistant should assume this responsibility. The indirect injury to the shoulder must not be neglected in the after-care.

#### CONCLUSIONS

Colles' fracture is the most common of all fractures. An appreciation of the anatomy of the wrist and the pathology of the condition is essential for proper treatment. Ideal end results can only be obtained by proper reduction of the fracture, and diligent and conscientious after-treatment.

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## CONGENITAL HEART DISEASE\*

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The subject of congenital heart disease brings to our minds something vague and indefinite, in that we so seldom come in contact with cases and particularly the diagnosis of congenital heart disease in the newborn. Undoubtedly, everyone here can distinguish a case of congenital heart disease among his acquaintances or clientele, but there are many of us who will look back and try to remember the diagnosis of such a case when the patient was only a few days old. In this paper we are not so much interested in the classification of the various types of heart anomalies—that we leave to Maude Abbott—but we are concerned with the diagnosis of congenital heart disease and particularly the early diagnosis in the newborn because of its very possible confusion with intracranial hemorrhage. In congenital heart disease, treatment is symptomatic and expectant, while a diagnosis of intracranial hemorrhage carries with it the obligation of a definite plan of action with unquestionable benefit to the child.

The etiology of these lesions may be the result of arrested development, persistence of prenatal openings or fetal endocarditis. In the majority of cases the first two are undoubtedly the cause, but occasionally the lesion may be attributed to bacterial infection or syphilis. There is no question but that developmental arrest is the most frequent cause; thus, the frequent association with other anomalies. It is possible that debility or sickness in pregnancy may have a bearing on the arrested development, but so far, little is known about the rôle they play. Familial tendencies have been recorded. The frequency of congenital heart lesion is difficult to estimate because so many cases recorded are taken from older children, while it is well known that many heart defects result in early death. The diagnosis is often impossible during life.

The symptoms of congenital heart disease most frequently enumerated are cyanosis, clubbing of the fingers, dyspnea, cardiac murmurs and thrills, and polycythemia. There are variations in these signs, depending on the type of heart anomaly present. These, however, are late signs and in the newborn the diagnosis at best is difficult and often impossible, owing to the absence of clinical evidence. Even when clinical evidence is present it is also difficult to differentiate it from other diseases of the newborn, particularly intracranial hemorrhage. In general, it might be said that the diagnosis in the newborn is dependent upon the

presence of cyanosis associated with a constant heart murmur and the less constant heart finding of cardiac enlargement. Often cyanosis may be absent (present in 90 per cent of the cases, according to Max Seeham) and the diagnosis will have to depend upon the cardiac murmurs or thrill that may be present. The presence of cyanosis alone is a much less valuable sign, since this is common in other disorders of the newborn. The presence of a heart murmur alone is the most valuable sign, but unfortunately one cannot always determine its presence.

Cyanosis is the most typical symptom. It occurs in varying degrees in the vast majority of cases. Cyanosis may not develop for a week or a month of life but then it may develop suddenly. Usually there is a blueness of the cheeks, nose and fingers (more noticeable during crying), and it may be present from birth. This is known as "morbus caeruleus" to older writers. The peculiar purple or blue red color to the mucous membranes of the mouth, nose and anus is also recognizable. The more severe the cyanosis, the more severe the lesion. Cyanosis may be intermittent and may be associated with respiratory difficulty. Convulsions may appear, making the diagnosis rather difficult.

Cardiac signs are not constant and vary a great deal. They are often hard to elicit because of the rapidity of the heart rate, the smallness of the thorax and the loudness of the respiratory sounds. X-ray and percussion are not of much value. The heart murmur is one of the most valuable signs but is not always present. Functional murmurs are rare in the newborn and any murmur which is constant in the newborn suggests heart lesion. The murmur may be loud and harsh, or soft and scarcely audible. Murmurs are usually systolic but may be diastolic in character and are usually heard over the precordium and even in the back. The presence of a thrill is of distinct value.

Anomalies elsewhere in the body are found in about 17 per cent of all cases, according to Maude Abbott. The diagnosis of congenital heart disease having been made in the newborn, it is only possible to speculate as to what the type may be. Some authorities go so far as to say that it is impossible to make the diagnosis any more definite than just "congenital heart disease." No attempt is made in this paper to classify the types that are found.

The differential diagnosis, particularly in connection with intracranial hemorrhage is important. As an aid it is fortunate, or perhaps unfortunate, that the incidence of intracranial hemorrhage is much greater than that of congenital heart disease. It is impossible to find statistics

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for the occurrence of heart anomalies but in looking over the records at Lutheran Hospital, Fort Dodge, Iowa, it was found that it has occurred three times in 238 deliveries, giving an incidence of 1.1 per cent. One of these cases was discovered at autopsy. Intracranial hemorrhage occurs, according to the reports, in from 1.9 per cent to 10 per cent of all cases. Tyler and Crawford report an incidence of 1.9 per cent of known cases of intracranial hemorrhage in 2,256 deliveries. Hines Roberts found blood in the spinal fluid in 10 per cent of 1,000 consecutive newborn. Not all of these had symptoms. There were seven known cases in the 238 deliveries at Lutheran Hospital and several other suspected cases in which no spinal puncture was made, although the symptoms suggested the diagnosis.

In heart anomalies in newborn, cyanosis is constant to a great extent, and not intermittent as in cases of intracranial hemorrhage, and is not associated with respiratory difficulty. In addition, heart murmurs or thrills are present very frequently and are not present in intracranial hemorrhage. Asphyxia pallida along with loss of the sucking reflex, a bulging anterior fontanelle and loss of muscle tone, aid in the diagnosis of intracranial hemorrhage. Resuscitation may be difficult in heart disease but not nearly as frequently as in intracranial hemorrhage. Later on, after the third or fourth day, one may have signs of convulsion, inability to nurse, twitching of the muscles, and intermittent cyanosis, all of which point more definitely to birth injury in the cranium. If there is any doubt, a spinal puncture should be done as soon as possible.

The prognosis of congenital heart disease, generally speaking, is bad at best. The earlier and more prominent the cyanosis, the less favorable the outlook. The prognosis varies according to the type of anomaly found. The most favorable types are those in which the defect is in the interauricular or interventricular septum or when a patent ductus arteriosus is found. Prognosis is bad in the type where we have a stenosis, ectopia, atresia of pulmonary or aortic vessels; it is also bad in cases of transposition of the great vessels.

The treatment of congenital heart disease is prophylactic and once the diagnosis is made it is symptomatic and expectant. Disease and malnutrition during pregnancy should be guarded against, and syphilis, whenever diagnosed, should be thoroughly treated. Once the diagnosis of a heart defect has been made in the newborn, it is important that the patient should be isolated from sources of infection and over-exertion should be avoided so as to conserve heart muscle. Nutrition should be sustained at all times.

## STRABISMUS\*

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In presenting a paper on strabismus my chief thought is to stimulate a discussion among the members as to their individual methods of handling squint and the results they are obtaining. While there has been little deviation from the older conceptions of squint and its treatment, it has been necessary to overcome some of the theories and especially to educate the profession and laity as to the necessity of beginning treatment very early in life. The ultimate aim of the treatment must be not only the cosmetic correction of the deviation but the improvement of vision of the squinting eye and the restoration or development of fusion and binocular single vision. Binocular vision is necessary for depth perception or stereoscopic vision. Single or monocular vision does not appreciate the third dimension of depth perception. If good macular vision is absent perfect binocular vision is not possible.

Lloyd<sup>1</sup> suggests that there are many more cases of squint than is usually suspected and that a routine test of the depth perception will disclose this. In examining 320 patients he found that twenty per cent did not have binocular vision for distance and near, and that six per cent had binocular vision for distance but not for near. No patient with much difference in the visual acuity of the two eyes has binocular vision, but if the visual acuity is alike although reduced he will likely have binocular vision. If one eye is corrected with a glass much stronger than the other, binocular vision is not usually present although it may be, as I have noticed by tests.

Derangements of binocular fixation cause various disturbances of the eye called squint. The terms binocular fixation and binocular vision are strictly correspondent, and the subjective and objective tests correspond. When both eyes are in the primary position the visual lines are parallel and the vertical meridians of the two corneas are both vertical and parallel. The eye is maintained in the primary position by the uniform contraction of all the eye muscles. In binocular vision the muscles of the two eyes act in such a way that the visual lines of the two eyes intersect in the object of fixation. Fusion of the two ocular images is a physiologic act. In squint one of the ocular images deviates from the object of vision. The exact cause or causes for the development of squint has not been definitely worked out. The following theories are given in the order of their origination:

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1. Muscular theory.
2. Accommodation theory.
3. Worth's fusion theory.

All of these offer scientific explanations of the cause of squint, and all apply in individual cases. One must be impressed by the difference in pathology and causes found in cases of squint, that is, first, squint developing after loss of vision in one eye; second, the difference usually found in the amount of hyperopia and astigmatism in the squinting eye; third, the retention of equal vision in the two eyes in alternating squint; and fourth, the correction of squint with glasses, orthopic training, etc. From these premises in individual cases one can logically associate one or more of the theories of squint.

Convergent concomitant squint, the type usually found in children, occurs as a rule in hyperopic eyes. Hyperopic eyes always use accommodation and convergence in contrast to the normal eye, which uses neither accommodation nor convergence for distance, but both for near. As the hyperopic eye uses accommodation for distance it must use an added amount for near. The third nerve therefore must send an excessively strong impulse to the ciliary muscle. This impulse would also over-stimulate the internal rectus since it is supplied by the same nerve and this would cause over-convergence. This instability of fixation results in the good eye fixing the object and the poorer eye turning inward. It is possible that some cases of squint develop out of purely muscle defects, that is, a convergent squint due to a convergent excess may be increased by a weakness of the externus or over-development of the internus. It is true that paralysis of the vertical muscles favors the development of a lateral squint. Lloyd<sup>1</sup> points out that the hyperopic eye is an undeveloped eye and that it has been shown microscopically that the fovea in hyperopic eyes varies from normal. The undeveloped fovea causes poor vision, and since the adductors are stronger they pull the eye in to suppress the image.

Barkan<sup>2</sup> offers an explanation of the squint on the basis of Sherrington's law of reciprocal innervation, and that strabismus of recent origin is in the nature of a habit spasm—that is, contraction and relaxation. The contraction and relaxation would be inclined to persist and the longer it remained the more permanent it would become.

Armstrong<sup>3</sup> made a study of the angle of the optic nerve during fetal development. He found that the angle of the optic nerve curves out rapidly and straightens during the last two prenatal months. He proposes the theory that the optic angle determines the phorias, the narrow angle

developing esophoria and esotropia, and the wider angles exophoria and exotropia.

However, back of all other causes of squint, is the lack of development of the fusion center. With this weakness of fusion there is an inability to maintain binocular fixation. Therefore if there is a deviation of one eye no effort is made to overcome it and the eye squints. In the presence of a disturbed or weakened fusion faculty, anything which renders the vision of one eye poorer than the other, such as opacities of the cornea or lens, fundus lesions and high refractive errors, may upset the normal balance of fusion and lead to squint. The suppression of the images of the poorer eye leads to deviations.

In alternating squint where the vision is equal in both eyes we have a concrete example of defective fusion center. Peter<sup>4</sup> states that an hereditary influence can be found in most cases of squint. We have noted for years an hereditary ametropic tendency in squint cases. An infant does not have fusion at birth and the eyes may show little tendency to fix an object for the first few months of life. Vision is also very poorly developed at birth and normal vision is not fully developed until the sixth or seventh year. Fusion with normal fixation should be complete by the sixth month. A permanent deviation may develop during the first few months of life.

#### DIAGNOSIS AND SYMPTOMS

Diplopia undoubtedly exists at the beginning of all squint but it is not noticed in children because they learn to ignore the image of the squinting eye early in life. If it develops later in life it may persist and be very annoying. While many eyes have poor vision before the squint begins it is also true that the longer the squint persists the poorer the vision becomes.

Illness is frequently given as the cause of squint by the parents. It is probable in these instances that in the presence of a faulty fusion faculty the already weakened muscle succumbed to the added strain of infection. An examination will usually show that the squinting eye is amblyopic or has a high degree of hyperopia.

A differential diagnosis between a paralytic and concomitant squint must be made. In paralysis of a vertical muscle head tilting will often be found.

Muscle weakness or over-development may result in convergent excess or divergent insufficiency and it is hard to estimate the strength or weakness of a muscle in early cases. The perimeter or the Priestly Smith tape are probably the most practical methods used to measure the degree of squint. In using the perimeter the squinting eye

is fixed exactly in the center of the arc and the good eye is fixed on a light twenty feet distant which is exactly in line with the center of the perimeter. A second light is carried around the perimeter until its reflection lies in the center of the cornea of the squinty eye. That gives the angle of deviation or angle of anomaly.

The amplitude of motion of each eye should be noted, the power of fixation and the ability to maintain fixation. The maddox rod, the red glass for diplopia and the ability to fuse with the stereoscope should be noted. The ability to maintain fusion can be tested by the amount of prism which the patient is able to overcome. If fusion does not exist some degree of squint can be found. Fundus lesions are not found as a rule in squint, but as Peter has pointed out, the fields are slightly contracted, there is a small central scotoma, the blind spot is slightly enlarged, and there is some loss of central vision. Naturally it would be difficult to demonstrate these findings in children.

#### AMBLYOPIA

Squint usually develops in infancy; the majority of patients are between two and three years of age, and if it is uncorrected amblyopic exanopsia develops, and persists through life. Peter states that amblyopia does not develop after the seventh year. The development of vision in an amblyopic eye by the use of glasses and orthoptic training has always been a mooted question. We must confess we have not had the success reported by some in high degrees of amblyopia. We have all seen improvement of vision where there is a moderate degree of amblyopia. Swett<sup>5</sup> reports a case of amblyopia in a girl twenty-one years of age in which vision was improved from 20/200 to 20/20. The treatment over a period of two and one-half years consisted of routine refraction, occlusion and later operation. She persisted in occluding the good eye for two or three hours daily over a period of two years. In our experience our patients have not cooperated so faithfully. Peter reports improvement in fifty per cent of his cases of amblyopia if the squint is not over 25 degrees, and Guibor reports improvement in twenty-five per cent of his cases, which were clinic cases.

Cases are reported in literature where an amblyopic eye has developed good vision after loss of vision in the good eye. We have personally never seen one of these cases. It is probable that most of us think of vision of 20/100 or less when we speak of amblyopia, while as a matter of fact, amblyopia means "weakened vision" and can apply to any decrease from normal. The success we have seen in small degrees of amblyopia and the

report of others in high degrees should stimulate us all to more persistent efforts to correct this visual defect.

#### TREATMENT

The treatment of squint divides itself into the non-surgical or medical and the surgical, but these divisions often overlap or may be in reverse order. We must remember that vision is not fully developed until the sixth or seventh year but that fusion develops by the sixth month.

*Medical treatment:* We should give the non-surgical treatment a thorough trial before we resort to surgery, and the treatment should begin as soon as the patient is seen. The mother often tries to conceal the defect and valuable time is lost before the child is seen by the oculist. The parents are advised that the child may outgrow the squint and also advised against any operative procedure before the child is grown. These ideas must be counteracted and they must be told that amblyopia may develop early if the eye is not used.

Refraction under full mydriasis with atropine is the first treatment of all cases of squint. Glasses are worn with comfort by children of two years and under, and some report the use of glasses in children only one year of age. Correction of the hyperopia usually found in a concomitant squint may bring rapid improvement in the squint and vision. We have seen patients where the eyes were almost immediately straightened after the proper correction was effected, and which would immediately converge when the glasses were removed. If the squinting eye is amblyopic and glasses do not make a noticeable improvement in the vision after a month or two, the squinting eye should be forced to fix on objects. This is accomplished by occluding the good eye or using atropine in the good eye to paralyze accommodation. Occlusion has proved most successful in our hands although some prefer dilatation with atropine. By occluding the good eye we know that all fixation is by the squinting eye and there can be no confusion of images. Occlusion for two or three hours a day is the usual routine, the good eye being covered with a gauze patch. At first the occlusion may be used at meal time and as the child becomes accustomed to this he is encouraged to work puzzles, draw, sew and do various things which call for close concentration. If the vision is so poor that the child cannot see to walk around with the good eye occluded it is best to use atropine for a time. Atropine has the advantage of constant action but I feel that occlusion used alone or in conjunction with atropine gives the best results. Sometimes fixation is transferred to the squinting eye and then the good eye squints but these cases usually



respond to treatment. Orthoptic training should be started early after refraction in an attempt to develop fusion and depth perception. While many instruments have been devised for giving orthoptic exercises a few of the simpler ones will do all that is required. An amblyoscope and a stereoscope used with the Wells or Sattler charts will suffice in most cases. The cheiroscope is helpful in some. The stereoscope can be used for home training fifteen or twenty minutes once or twice a day. Dr. Guibor has had some excellent results in his clinic at Northwestern University with training periods only once a week. It was not often possible to get home training in the type of patient who came to the clinic. The amblyoscope should if possible be used first in the training and after they begin to develop fusion the stereoscope can be used. If fusion is impossible with the stereoscope, slip-over prisms, base out, in convergent squint are used with the stereoscope, gradually reducing the strength of the prisms as fusion develops.

We have no tabulated statistics to offer at this time as to the exact results obtained by orthoptic training but we believe that the results are sufficiently encouraging for us to continue to develop this line of work. As it is not possible for all patients to report for treatment at the office once or twice a week, home training with a stereoscope should be instituted, using the stereoscope with different cards for twenty minute periods once or twice daily. Occlusion can easily be carried out at home and the good eye should be occluded two hours or more daily.

As stated before we should develop a system of handling these cases and keep careful records of progress made. According to various authors, between twenty-five per cent and fifty per cent of cases of squint can be corrected by non-surgical methods. This presumes, of course, that the work is begun early and should be started before the sixth or seventh year of life although Peter states there is no upper age limit. It seems practical to train a nurse or office assistant to give orthoptic exercises which would be directed by the oculist. An assistant will have the time and patience to carry out these exercises.

*Surgical treatment:* If squint is not improved by treatment and glasses, an operation is indicated. There is considerable discussion as to the time of doing this, just as there is as to the type of operation. As a general rule we believe that if glasses will improve the squint they will show considerable improvement within the first or second month. If no improvement is noted by that time occlusion and orthoptic training should be started. This should be tried several months before giving up. Therefore, I would say that if refraction and

orthoptic training do not show results by the sixth month an operation is indicated, and it may be done as early as the third or fourth year of life. We will not discuss the various types of squint operations except to say that we are having increasingly good results with the recession operation, which in marked cases can be combined with an advancement of the opponent muscle. It is surprising to find how much squint can be overcome with a recession so that we seldom advise combining an advancement at the first operation.

#### THE RECESSION OPERATION

In performing the recession operation which implies suturing the tenotomized muscle to the sclera back of its normal insertion, judgment must be exercised as in any squint operation. Roughly one millimeter of recession will correct about five degrees of squint when applied to the internal rectus and a lesser amount about two and one-half degrees when applied to the external rectus. The new attachment must not be placed back of the equator of the eye, which is about five millimeters posterior to the insertion of the internal rectus, and two and one-half millimeters posterior to the insertion of the external rectus. Exceptions to these measurements are to be found in an abnormal eye. Jamieson has pointed out that the diameter of the normal cornea is eleven millimeters. A larger cornea would indicate a larger eye and a smaller cornea a smaller eye, so that an accurate estimate of the amount of recession can be gauged by the size of the cornea.

The location of the new attachment should be marked on the sclera with gentian violet or other dyes as it is hard to visualize the location of the attachment after the tendon has been severed. One catgut suture with double armed scleral needles is sufficient in anchoring the muscle to the sclera. It is difficult to insert the ordinary eye needle through the tough sclera but the scleral needles are much easier to insert and do not cut the scleral fibers. The needle should always be in view, that is, you should be able to see it passing through the sclera fibers and then there will be no danger of perforation. The catgut may be brought out through the conjunctiva but we tie it over the muscle and close the conjunctiva with silk.

The advantages of recession over other muscle operations in our hands has been first, there has been less reaction and discomfort to the patient following the operation; second, there is less danger of over-correction; and third, the hospitalization period has been greatly shortened. In fact, a number of these patients were not hospitalized and the good eye was not bandaged. The patients returned to their homes following the recession. The

operated eye is kept covered for about a week. Some have objected to recession because of the possibility of a loss of convergence but we have not noted loss of convergence in our cases.

It is reasonable to presume that in the presence of some fusion ability, even if it is below normal, there will be a constant effort to fuse which is increased if the visual axes of the two eyes are made parallel or nearly so by operation. While exact calculations or measurements of the angle of the squint are important we believe that it is relatively impossible to correct the deviation exactly because we lack information as to the exact strength of the muscle operated upon or its opponent, but we do believe that if the images of the eyes are brought close together by the operation the fusion centers will be stimulated to increased efforts and that fusion will often be developed. This we believe explains the delayed improvement in recession and other squint operations. Most of us believed that our duties were over after the operation, particularly if the eyes looked straight. We should, I believe, go farther and at once begin to develop fusion and stereoscopic vision. The same exercises can be used as before the operation although now the amblyoscope will probably not be needed and the stereoscope will suffice. This training should continue for a year or more until fusion is developed. Dr. Guibor has shown that good results can be obtained with weekly treatments so that if one trains an assistant the procedure is not so formidable as it appears. We believe that after this work is started it will become simply another office routine.

To indicate the type of operation used by our group I reviewed 34 operative cases of squint. These were private cases and were operated upon during the last three years. In 21 of these, recession alone gave good surgical results. In 13, some other type of operation was either combined with the recession at the first operation, or before or after the recession. In five of these combined cases, an advancement was performed at the same time; in two, a recession of the internal rectus and advancement of the external rectus was performed on the same eye; in three, a recession of the internal rectus of the squinting eye was accompanied by advancement of the external rectus of the opponent eye; in one, a recession of the internal rectus of the left eye with a tuck of the external rectus of the left was made and one and one-half years later a recession of the right medial rectus was done. The case improved from 20/40 to 20/20 vision in both eyes. In one case a tuck had been made at twenty-three years of age. Seven years later the patient still had a marked convergence and at that time a recession of the internus

corrected the deviation. In one case, where a recession and advancement were performed at the first operation an over-correction developed. Three months later the recessed internal rectus was advanced and the deviation corrected. The vision in this case improved from 20/40 to 20/30 to 20/20 in each eye. In one case, a recession of the left medial rectus did not correct the deviation, but three months later an advancement of the left external rectus did make the correction. In the 21 cases where recession alone was used, two first had a recession of one internal rectus and as the squint was not fully corrected a recession of the internal rectus of the opposite eye was made a few months later. All of these cases had good surgical results when the case was completed except two. One case, the patient being thirty-five years of age, was not fully corrected by the recession and refused further operations; and one case had a congenital paralysis of both external recti. A number of the combined cases were operated upon before we were entirely familiar with the possibilities of the recession operation. We believe that with added experience better results can be obtained by this operation.

Fifteen of the 34 patients were under seven years of age. Of the remaining 19 two were eight; one, nine; three, ten; two, twelve; one, fifteen; three, nineteen; two, twenty-one; and one each twenty-two, twenty-four, twenty-five, twenty-nine and thirty-five years of age. The two youngest patients operated upon were just past three years of age; the oldest was thirty-five years of age. Nineteen of these patients were over seven years of age, which indicates that we did not operate early enough to get the best visual results. As I have stressed before, practically all observers have found that the best results are obtained when the squint and amblyopia are treated before the sixth or seventh year. Not all of these patients have developed fusion and stereoscopic vision, but we know from follow-up examinations that a number have binocular single vision. Several reported recently who had developed fusion following the operation without further treatment except to wear their corrective lenses. Practically all of the cases had gone through the routine refraction under mydriasis and had worn glasses for some time before the operation. Our personal experience with orthoptic training has not been developed to the point where we can make definite deductions as to its merits, but I am firmly convinced from observations and reported work of others, that it is valuable both in preoperative and postoperative cases. We now have patients under home treatment using a stereoscope with cards which we furnish. These cards can be exchanged as the child



becomes familiar with them. While no squint operation is perfect from both the visual and deviation standpoints, we have had better success with recession than any other procedure. Recession can always be followed later by an advancement of the opponent muscle or a recession of the other eye if indicated. Our observations have led us to believe that sometimes a patient does not develop fusion after the eyes are made parallel by operation because of a vertical phoria. In one case following operation in which the maddox rod showed no abnormal lateral phoria the patient could not fuse. Further examination showed a four degree hyperphoria. When this was corrected by a prism the child could fuse perfectly.

#### SUMMARY

1. Begin squint treatment early. Amblyopia develops in a relatively short time after the eye begins to deviate and before the seventh year of life.

2. Refraction under atropine if not successful should be followed by occlusion and orthopic training. If the eye still deviates after four to six months an operation is indicated.

3. The possibilities of orthopic training before operation and after operation justify its use as a routine measure.

4. From our personal experience, in a limited number of private cases, I feel that recession has been the most satisfactory operation.

5. The vertical phorias in the treatment of squint cases should not be overlooked.

6. Efforts should be made through nurses, teachers, and the family physician to start the treatment for strabismus early in life. Parents should know that glasses may be worn at two years of age or under, and they should also be made to understand the possibilities of orthopic training.

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#### Discussion

Dr. George A. May, Des Moines: Dr. Naftzger has reviewed the etiology, diagnosis and treatment and he is to be congratulated on having found an operative measure that has proved so successful in helping to correct this form of trouble.

In considering the etiology of squint, much is dependent upon the type of squint under consideration. The essayist in handling the subject has considered principally concomitant, convergent squint which, of course, is the one not only most common but the most amenable to treatment. After reviewing various

causes, he states that back of all other causes is weakness in the fusion center and fusion faculty. It would seem to me that the term "fusion center" or "fusion faculty" is rather unfortunate as there is an increasing accumulation of evidence to indicate that fusion is not a faculty, and there is no anatomic evidence of the fusion center, and if fusion were a faculty, a cortical center would be required. Fusion is the correlation of the functions of the retina, intracranial visual pathways, visual areas in the cortex and their connections with the higher psychic centers without a specific center for fusion. To speak of a fusion center as suggested by the work of Worth, of course simplifies the discussion; but to do so is to make of this perplexing problem an algebraic formula where  $x$  is given a certain value, and the result of the problem becomes a simple mathematical conclusion. In etiology of squint, visual efficiency, equal or nearly equal in both eyes, is of paramount importance. In convergent squint, or the type under consideration, hyperopia is the rule. The element of accommodation for dirt is present. Hyperopic eyes are underdeveloped eyes, and with this may be underdevelopment of the macula and differences in the refractive mechanism of the two eyes.

A rather difficult problem is presented when two dissimilar images are to be fused into one impression. One is likely to be suppressed. Nature also helps to avoid confusion by turning the weaker eye out of the line of vision. When we add lowered efficiency, hereditary, acquired or other forms of nervous instability, or when we have a defective nervous mechanism somewhere in the visual path we have enough to cause the ordinary type of convergent concomitant squint. Where there is macular inefficiency the tendency to squint is increased, since it is known that the fovea is the only part of the retina with nerves which have to do with direction of the eye.

In treatment, we believe that refraction and other training which has to do with the development of visual acuity and visual efficiency, are of first and paramount importance. This, of course, includes occlusion and the use of atropine to force the defective eye into use. Of less importance is muscle training, and lastly, and of least importance are operative measures.

The causes of failures in our attempts to correct squint are:

1. Imperfect refraction or inability to bring visual efficiency in the squinting eye to, or near to that of the fixing eye.

2. Inability to overcome the habit of suppression in the squinting eye.

3. Imperfect mechanical corrections by prisms or by operative measures.

4. The squinting eye, which by habit or some other unusual condition has developed an extra central macula. That such a macula sometimes does develop was pointed out seventy-five years ago by Von Graefe and later by Donders and others. When such an eye is straightened, operatively, with what would seem to be perfect cosmetic result, the results are doomed

to failure, as there seems to be a strong force to put the extra central macula into its former alignment.

5. The lack of perseverance in trying to carry out our corrective measures, and lack of cooperation.

6. Vertical phorias should always be looked for before treatment is begun and tests should be made during the course of treatment as this may be the cause of failure.

**Dr. C. W. Rutherford, Iowa City:** Speaking of operations, there has been a great deal of literature on the correction of squint by measurements. I have never had any outstanding success in attempting to graduate a correction by preliminary measurements.

Dr. Naftzger mentioned obtaining about five degrees of correction with each millimeter of correction on the muscle. I have been much impressed with Dr. E. V. L. Brown's statement when he said that in a Worth advancement, for instance, "take all you can get." That is the rule I have followed. Sometimes all I could get was inadequate.

I think the recession operation is a very good one, if one can study the case long enough beforehand to know something about the patient. I really believe we will have better success in operating on ocular muscles if we find out what the patient does under various circumstances—how much squint he has in the morning; how much he has in the afternoon or evening; how much he has after using the eyes strenuously, and various factors which enter into the manifestation. I do not like the recession operation because it weakens the muscle which has been receded. If one can imagine that old example of the wheel—when a string is tied on the wheel in front of a vertical axis, one gets a far greater pull in rotating that axis about the center than if the string is tied on the end of the vertical axis and a pull is made on that. The recession operation is a practical example.

The tucking operation has the disadvantage of leaving (usually) an enlargement, or a knob of tissue underneath the conjunctiva at the point where the muscle has been tucked; otherwise the operation is very successful from the standpoint of correction of the squint.

Emphasizing what Dr. Naftzger said, that glasses should be put on for some time before any operation is undertaken, one cannot properly study the case in its various aspects unless glasses are on, and the study of the case is the prime essential to the success of the operation.

**Dr. William W. Pearson, Des Moines:** I want to compliment our doctor for presenting the subject in such a fine, concise manner. Of course we appreciate the fact that his time is limited. I want to mention one point he brought out, and that is the loss of the fixing eye. I have two such patients in mind where the fixing eye was lost, and the second eye had a vision of less than 20/60. I observed both patients over a period of years, and there was practically no improvement. I will say, however, it was very apparent that the vision these individuals possessed had been put

to better use by practice; but the test with our charts showed no appreciable improvement. Both men lost their fixing eyes through accidents—puncture wounds—and the eyes could not be saved.

**Dr. Harold J. McCoy, Des Moines:** There is one impression I have had in these cases, and it concerns a statement that Dr. Brown made. He said, "Fully determine whether the vision is there or not." The question of whether a real amblyopic eye ever develops vision is not settled. If vision is not there, it is doubtful in my mind if a real amblyopic eye ever develops.

I remember two patients, each of whom had a marked, convergent squint, which I corrected at three years of age. The correction was about the same in each eye. When these individuals attained the age of seven I found that each had one amblyopic eye; that is, a reduction of vision. There must be a distinction there. It was not absolute loss of vision, but there was 20/100 vision in the one eye in each case. In the other eye there was practically normal vision.

Of course the question is, do we know those things? The only way we can tell is by doing the things brought out by the paper, and try and correct the squint by whatever method seems to be advisable in the case at hand. A certain number of these eyes will straighten up whether they are amblyopic or not, or whether they have reduced vision in one eye or not. Many other patients with one amblyopic eye have never had a sign of squint. I doubt whether we can do much to develop vision in an amblyopic eye whether we think so or not, when the vision is not there.

**Dr. James E. Reeder, Sioux City:** One point which has not been mentioned is that occasionally the squinting eye has the best vision. It is in this type of case that we are most liable to develop binocular fusion. This condition and that of alternating type are the classic cases in which we can expect a better end result in developing fusion or binocular single vision; but when the amblyopic eye is the squinting eye, the end results are disappointing. In this type of case we have an eccentric macula, and in the attempt to develop a clear image there is such a stretching of the muscle that we are compelled to reoperate.

**Dr. Naftzger (closing):** I wish to thank all of these gentlemen for their discussion. I realize more and more that no type of squint operation has probably given absolute satisfaction. However, I think any operative procedure, or anything we use that is developed in our own hands or kept at, will probably bring us better success than someone else might have with it. We have been enthusiastic about recession. We may be wrong. It remains to be seen. I want to try it out for a while longer.

In regard to the macular vision, it has been proved or shown that vision is not all confined to the macula, but that the area surrounding the macula responds to light stimuli. The extent of this area is not known, but the extra macular vision undoubtedly aids many of these patients where vision is developed in an amblyopic eye.



PAPILLARY CYSTADENOMA OF THE  
OVARY\*

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The aim of this paper is to bring out a few valuable clinical points of interest in the diagnosis, classification and treatment of papillary cystadenoma of the ovary. This condition is usually considered benign, but it frequently develops a most malignant course.

Years ago, in private practice, I had the opportunity of delivering three hydatidiform moles of pregnancy in as many years. I had not seen one before and outside of clinics and consultation, I have not observed one since. I have had a similar experience with papillary cystadenoma of the ovary. There is so much in common, in appearance, course, and response to treatment, between these pinkish, "Catawba grape-like" cysts of the chorion, and the grape-like papillary cystic adenoma of the ovary, degenerating into the malignant, proliferating type, that I cannot resist the association of the two conditions. DeLee refers to this under polycystic degeneration of the ovaries, adding: "While the two conditions are often associated, we cannot draw a casual connection between them, nor can we explain their frequent coincidence."

The reported experience of a few physicians is of little value, but a study of the combined experience of the larger clinics is of great value in intelligent classification and treatment of these conditions. Dr. George H. Gardner of the Gynecological Pathology Laboratory of Johns Hopkins Hospital, recently tabulated 607 cases of ovarian tumors, and his classification, in its condensed form, has been used for this discussion. The age incidence showed the youngest patient to be six years and the oldest seventy-seven; 143 or 23.5 per cent were between 31 and 40 years; 160 or 26.3 per cent were between 41 and 50 years; and 456 or 75 per cent were over 50 years of age. Gardner compiled the following simple classification from 422 selected cases of endometrial or retention cysts, or new-growths in the ovaries:

TABLE I

Condition	No.	Per cent
Simple retention cysts.....	214	50.71
Endometrial cysts .....	19	4.50
Benign epithelial cysts.....	77	18.26
Papillary cystadenomata (semi-malignant) .....	25	5.93
Carcinomata .....	39	9.24
Dermoids and teratomata.....	35	8.28

Fibromata .....	12	2.84
Sarcoma .....	1	0.24
Total .....	422	100.00

He also shows the relative frequency of different types of ovarian neoplasms:

TABLE II

Condition	No.	Per cent
Benign epithelial cysts.....	77	40.75
Papillary cystadenomata (semi-malignant) .....	25	13.22
Carcinomata .....	39	20.63
Dermoids and teratomata.....	35	18.52
Fibromata .....	12	6.35
Sarcoma .....	1	.53
Total .....	189	100.00

He deduces from these figures that one-half of the ovarian lesions are of but minor significance. Of true neoplasms, one-fifth are malignant, one-eighth are semi-malignant, and two-thirds are benign, but may assume malignant characteristics at any time. He places the frequency of papillary cystadenoma at 5.93 per cent of all ovarian growths (Table I), and at 13.22 per cent of the different types of ovarian neoplasms (Table II). As we see from the above classification, cysts of the ovary are common, but papillary cystadenoma of the ovary in a malignant form is not common.

I have studied a few of these cases in clinics and have recently had the opportunity to study intensively, over a period of thirteen years, a case of malignant papillary cystadenoma of the ovary, observing it from the "cradle to the grave," so far as the tumor itself was concerned. I wish to present this case, since it illustrates so well the composite of the case histories I have observed of papillary cystadenoma of the ovary.

CASE REPORT

For the sake of brevity, the long general history of this case has been omitted. The patient was first examined by me in 1920, when she was twenty-eight years of age. She gave a history of typhoid at thirteen, marriage at fifteen, and pregnant at eighteen, miscarrying at three months, from which time she had been extremely constipated. Pelvic examination showed a marked retroflexion, with the left ovary large and pressing against the rectum. In October, 1922, two years later, examination showed a five inch tumor mass along the left broad ligament. Surgical care was advised, but delayed as pain and acute symptoms were not present.

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In October, 1926, four years after surgical care was first advised, the patient, now thirty-four years of age, again presented herself, this time with a rapidly growing abdomen, simulating pregnancy, but there had been no movement or menstrual irregularity. She had excessive constipation, sacral and upper leg pains, and a feeling of fullness and heaviness in the abdomen. A large, oval, putty-like mass filled the pelvis and extended two inches above the umbilicus. There was no movement, no fluctuation, and no heart sounds. The cervix was closed and hard, and the uterus was only slightly larger than normal, but markedly retroflexed and wedged tightly against the rectum.

Under general anesthesia, October 16, 1926, a large seromucilaginous cystic ovarian tumor, filling all available space in the lower abdomen and pelvis, was removed with the left broad ligament. Macroscopically, this was a wine-colored, multilocular, grape-like, cystic ovarian tumor, with finger-like processes both inside and outside the cysts, and with many of these processes attached to the bowel, mesentery and peritoneum. These cysts contained wine-colored, gelatinous material. Microscopically, the tissue report was malignant, colloid, cystadenoma of the ovary. There was much spill and shock. The appendix and right ovary were apparently normal and the retroflexed, normal sized uterus showed no apparent involvement, and these organs were undisturbed.

From 1927 to 1930 she reported quarterly with no evidence of recurrence. In September, 1931, at the age of thirty-nine, nearly five years after the operation, she developed urinary and bowel obstructive symptoms with sacral and leg pain, and an examination showed a six inch mass jamming the pelvis. On September 17, 1931, surgical care was given at once to relieve bladder obstruction. A large, multilocular cyst of the same type had firmly imbedded itself on the anterior surface of the rectum and retroflexed uterus, and the posterior surface of the bladder, with dense adhesions to portions of the bowel. This was removed as thoroughly as possible and a large, one inch, soft rubber drain was inserted in the cavity, surrounded by ample soft rubber protecting drains. Two weeks later, on October 2, 1931, I inserted 100 mgm. of radium deep in the cervix for twelve hours, in the vaginal vault for another twelve hours, and through the tube in the center of the cyst cavity for four hours. This was a radical procedure, justified only by the apparent inevitable recurrence. This was followed by deep x-ray therapy to the point of skin tolerance. The wound was kept open purposely to relieve tension of the gelatinous drainage.

On April 2, 1932, one month after the suprapubic drainage wound closed, she developed a bowel fistula. She was admitted to the University Hospital on April 15, 1932. There she received deep x-ray therapy; first in April, 1932; second in September, 1932; and third in February, 1933; with wound and bowel closure, and a slight gain during the April and September series, but no response to the February series. The fistula reopened in the bowel on April 1, 1933, was followed in a few days by urinary fistula, and she died April 24, 1933, at forty-one years of age, thirteen years after the first proof of ovarian tumor, and over six years after the first delayed surgical care. Postmortem examination was refused.

#### REVIEW OF LITERATURE

I find in reviewing the opinions of those who study a large number of these cases that their conclusions are much the same as mine after treating this unfortunate woman for thirteen years. The late John B. Deaver stated that the diagnosis is difficult to determine preoperatively. The intraligamentary type is difficult to differentiate from tubo-ovarian disease or hydrosalpinx. Deaver believed that treatment of papilliferous carcinoma lies entirely in the hands of the surgeon and that this type of treatment is usually palliative, there having been only a few four year cures. He favored the radical operation, in which the entire pelvis is cleaned up with as little spill as possible. Where there is brown gelatinous material, he advised removal of the cyst, and ovary of the opposite side. *Merely* to open the abdomen and, when the condition is recognized to close it up, is evading the issue and shirking responsibility.

Novak in discussing Deaver's paper, states: "There is no subject in gynecology which is in need of greater clarification than that of the ovarian neoplasms, and especially the cysts . . . There is not a cyst of the ovary which offers more difficulty in prognosing, as based on histologic observations, than the papillomatous cystadenoma."

Moench of the Mayo Clinic, in a clinical study of 402 cases of malignant ovarian tumors, found that the percentage of recurrences after bilateral oophorectomy was almost as high as when only one ovary had been removed; that the average age of the patients with papillary cystadenoma was forty-six years; and that the proportion of deaths three years after operation was much lower among the patients having papillary cystadenoma than among those who had carcinomatous adenomas or solid adenocarcinoma.

According to Masson and Hambrick, the treatment of patients with papillary cystadenoma of



the ovaries is surgical. The use of roentgen rays and radium after operation is advisable in those cases in which evidence of a malignant condition is found by microscopic examination. After the menopause, removal of both ovaries is worthwhile, even if only one of them appears to be involved with pseudomucinous cystadenoma. Bilateral removal is more urgent when papillomata are seen grossly or when a malignant condition is found microscopically. Baksht advocates radical surgical removal of the primary focus and the metastases. He considers postoperative irradiation as useless. Mayer removes only one ovary in unilateral tumors, and performs the bilateral ovariectomy and hysterectomy in older patients only. Norris and Murphy observed 153 malignant ovarian neoplasms, and showed better results with removal of both ovaries when the appearance was grossly malignant. Anspach and Montgomery report that while pain is an early symptom, it is often not intense enough to force the patient to the physician, but the enlarging abdomen *does*, which, unfortunately is the result of ovarian malignancy and the resultant growth, and almost invariably an indication of the final or hopeless stage of the disease, hence "an early diagnosis is most essential." In the early stages of carcinoma, they advocate extirpation of the entire uterus and both adnexa, and later, as much of the malignant growth as possible. Mayer advocates early diagnosis and removal. Crossen states that papillary cysts are nearly always bilateral and the most satisfactory procedure is to remove surgically as much of the growth as is possible with safety. He has found massive roentgen ray dosage to be very beneficial on the remaining growth after operation.

#### SUMMARY

A brief summary of these combined experiences with a large number of papillary cystadenoma of the ovary would indicate that:

1. Early clinical diagnosis is essential to control this neoplasm in its malignant form.
2. Early diagnosis is only possible in early surgical removal.
3. Early surgical removal of all malignant tissue in the pelvis is essential to effect a cure.
4. Early, deep, heavy x-ray therapy as a clean up after early diagnosis and early surgical care is advisable in treating any remaining malignant tissue.
5. In the past, neither surgery nor irradiation has had a fair chance at these growths, because they were applied too late.
6. In the future, for more successful treatment of papillary cystadenoma of the ovary, the diagnosis and surgical removal must be made at a

much earlier period. This, combined with earlier deep x-ray therapy in definitely malignant cases, should yield better results.

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#### Discussion

Dr. J. H. Randall, Iowa City: I thought that in discussing Dr. Ellyson's paper it would be interesting to give the results of a study of neoplastic tumors which we have recently made at the University Hospital. In the last ten years we have had 206 neoplastic tumors. From this list we have excluded all of the retention cysts and have included only those tumors which are definitely neoplastic.

We find in this group that 91 of these tumors were benign cystomata; that makes approximately 44 per cent. We find also that we had 75 carcinomata, approximately 36 per cent; 23 dermoids, approximately 11 per cent; twelve papillary benign cystomata, approximately 5.8 per cent; and five fibromata, approximately 2.4 per cent.

We had in the carcinomata classification twenty-seven cases that were distinctly papillary, and twelve papillary cystomata which were definitely benign. Altogether we had 39 papillary tumors. In other words, approximately nineteen per cent of the neoplastic tumors were of the papillary type, that is, about one in five. Most of these papillary tumors were definitely malignant. Approximately one out of seven of our neoplastic tumors was a papillary carcinoma.

Every ovarian tumor has cells which have a double function. One function of these cells is that of secretion, and if this function is very pronounced the ovarian cyst will be lined with cells which are taking up an orderly arrangement. The other function of the cell is that of multiplication. If the function of multiplication is great, then the ovarian stroma must become papillated in order to accommodate the growth of the cells. Naturally, a papillary tumor, then, is one in which the growth function is very pronounced. It is for this reason that papillary tumors are frequently malignant. It is also for this

reason that papillary tumors are frequently bilateral.

Dr. Ellyson has emphasized the importance of making an early diagnosis. In going over our list of tumors we find that the most common symptoms mentioned by the patients were pain and tumor. We would emphasize that if any patient complains of pain and tumor, she should have a thorough pelvic examination.

The other symptoms which the patient complains of are not pronounced. Malignant tumors cause more subjective symptoms than do benign tumors. We wish to mention urinary symptoms and gastro-intestinal symptoms, the loss of weight and the presence of ascites as being more common in the malignant type of tumor. We wish also to emphasize that menstrual disturbances are not common in neoplastic tumors. We found that only twenty-five per cent of our patients complained of some menstrual disturbance, and that complaint was not very prominent.

As to the treatment of the ovarian tumors, we feel that any patient with an ovarian tumor of any size, excluding the inflammatory tumors, should be operated upon. If the tumor is malignant, we prefer the total hysterectomy and bilateral salpingo-oophorectomy.

Dr. H. J. Brackney, Sheldon: I have been extremely interested in this discussion on papillary adenoma. All of these men are telling about giving deep x-ray therapy. I have had only one experience, and that was enough as far as I am concerned.

The patient was the sister of a physician living in Chicago. She had been operated upon by one of the surgeons of Chicago a year and one-half previously, and they had given her a great amount of x-ray therapy. After her return home, I received a letter from her brother, a physician, asking me to go and see her. I found a tumor about the size of a croquet ball, and suggested that she return to Chicago, not because I wanted to get rid of her, but simply because her brother was there.

She said, "Doctor, if I go back to Chicago, they are going to give me more x-ray treatments, and I will die first."

She did die; but in this respect I want to raise a peculiar point. You have a live patient and some of them would rather be dead than to take this x-ray therapy, because it gives them a crack they don't recover from easily. You cannot always make these patients do what you want them to do. They just back up on you. This patient died very promptly, in about three or four months. Very much to my surprise, she did not have any obstruction of the bowel or anything else for which I was looking, that is the characteristic symptoms of a malignant growth in that territory. Of course, the brother wrote me at once and told me what the diagnosis had been.

Dr. Ellyson, (closing): I was impressed by the statistics that Dr. Randall gave and also the statistics that I followed in the various articles and reviews in this line. They are very much the same. The percentage of benign cases runs usually from 45 to 51 per cent. The percentage of the malignant

cases runs around five to six per cent of the papillary type. It seems to be almost a universal percentage on this line.

Regarding the symptoms, I did not go much into detail because generally there is a lack of early acute intense symptoms and these patients, as a rule, do not come to the physician early.

I was especially interested in Dr. Brackney's remarks because he pictured an exact duplication of my experience. Dr. Kern just asked me why I didn't use x-ray earlier. The fact is that I did, but I did not mention it because the patient would not stand for it. She refused further x-ray treatment after a considerable burn and a deep reaction. When she became desperate, she would tolerate almost anything; but the great trouble with a large percentage of these patients is that we see them too late.

### TRAUMATIC RUPTURE OF THE KIDNEY\*

LEONARD A. WEST, M.D., Des Moines

On August 19, 1933, the patient, Everett Jones, nine years of age, slipped while running and fell on a pile of rocks, striking the right lumbar region. He was visiting relatives on a farm in northern Iowa and went immediately into the house. The relatives noticed that he looked pale and a few moments later he passed blood in the urine. A doctor was called, who put him to bed, applied ice-packs over the right lumbar region and prescribed codeine for pain. There was no evidence of an abrasion of the skin at the site of the injury. The doctor told the patient's mother that the bleeding would stop in a short time if the child remained in bed and was quiet. During the following eight days the patient passed blood continuously and complained of frequency of urination and pain in the right lumbar region. His temperature averaged about 101 degrees, and he passed many fish-worm clots. His frequency of urination developed to such an extent that he had to urinate every hour during the night. He was seen several times during this period by his physician, who according to the boy's mother still thought the bleeding would stop and said there was no occasion to operate and that it would not be advisable to move the patient. However, after this long continued bleeding with its associated pallor and weakness, the parents became alarmed and it was decided to move the patient to his home in Des Moines. He entered the Iowa Methodist Hospital on August 28, 1933, nine days after the accident, and I was called in consultation by the family physician. Examination revealed a mass in the right lumbar region with definite rigidity of the musculature and tenderness on palpation. Profuse hematuria was still

\* Presented before the Eighty-third Annual Session, Iowa State Medical Society, Des Moines, May 9, 10, 11, 1934.



present, his hemoglobin was 70 per cent; erythrocytes 3,250,000; and leukocytes 12,600, with 85 per cent polymorphonuclears. His temperature was 100 degrees, pulse 100 and there was marked pallor. He looked very ill. The following day, August 29, a blood transfusion of 250 c.c. was given by the citrate method. This checked the bleeding for a few hours. On the following day 20 c.c. of paternal whole blood was injected intramuscularly into the buttocks and again the bleeding was checked for a few hours. However, it re-occurred with marked frequency and pain on urination and numerous clots. Following the transfusion the erythrocytes rose from 3,500,000 to 4,000,000, and the leukocytes from 12,500 to 15,800. Because of continued bleeding and evidence of tumefaction an exploratory operation was decided upon. Under gas anesthesia, the usual lumbar incision was made over the right kidney. The perirenal tissues showed evidence of extravasation of blood. There was no extravasation of urine. The capsule of the kidney was enormously thickened and lacerated. There were dense adhesions throughout the entire fascial plane. On dissecting down through the kidney substance it was found that the kidney had been completely severed through the hilus with a fibrinous exudate over the laceration. The injury was so extensive that it was impossible to suture the kidney, and a nephrectomy was done. A Penrose cigarette drain with iodoform gauze was inserted, with the usual closure.

The pathologic report was as follows: "The specimen consists of a kidney and a piece of perirenal fat. The kidney is ruptured mid-way between the poles so that it consists of two distinct halves. The tissue at the point of rupture is traumatized and there is considerable inflammatory exudate in this region. The perirenal tissue excised shows marked congestion. Diagnosis: Ruptured kidney."

According to Hugh Young, "The mechanism of rupture due to direct violence is a crushing force applied to the kidney, between the abdominal wall containing the twelfth rib, in front, and the posterior parieties behind, the kidney resting on the muscles and lateral processes of the vertebrae and being contained on the medial side by the vertebral bodies. To the crushing force is sometimes added an element of shearing, when the crushing object also moves across the body. The kidneys can escape only by moving up and down. Such movement is easier for the left kidney, the right kidney being somewhat restricted by the liver. Pathologically, one usually sees radiating fissures. The fissures may involve the parenchyma alone or may extend into the pelvis or calices. This difference is im-

portant as Tuffier has shown that the exposed surfaces of the parenchyma do not secrete urine under these conditions, and therefore no urine will be mixed with the hemorrhagic extravasation unless the pelvic cavity is opened. When the parenchyma is ruptured the fibrous capsule breaks with it, but occasionally does not. The degree of tearing varies. There may be only one fissure, but this may extend clear across the organ, separating it into two parts. Portions of the parenchyma may be torn off the pelvis. In the severest cases the entire kidney is broken into small pieces. Blood vessels are always torn so that hemorrhage is constant. Its severity depends on the size of the vessels ruptured. The location of the rupture is important in prognosis and treatment as portions of the kidney, the arterial supply of which has been torn across, will inevitably undergo infarction.

"Hemorrhage is the chief complication. It may be entirely extra-renal, entirely confined to the pelvis, or may involve both kidney and peri-renal tissues. The last is the rule. Cessation of the hemorrhage depends generally on the extent of the injury. Thus, if the true capsule is intact, the hemorrhage is seldom extensive. Peri-renal accumulations may develop enough pressure, if the peritoneum is not ruptured, to stop the bleeding. If the peritoneum is ruptured, the loss of blood is usually more severe. Peri-renal hemorrhage may spread in the connective tissue, usually lifting up the posterior parietal peritoneum, sometimes filling the entire flank. Extension to the other side does not occur, but the space under the diaphragm may be filled or the blood may creep along the psoas fascia causing ecchymosis over the femoral triangle or along the spermatic vessels, causing inguinal and scrotal ecchymosis.

"Urinary extravasation is a serious complication but not as severe as extravasation from the lower urinary tract, since the urine in the kidney is under much lower pressure.

"Late complications may occur from injuries to the pelvis or ureter leading to obstruction so that hydronephrosis, partial or complete, may occur. Infection is not uncommon in these cases and aggravates the condition. In healing, the parenchyma undergoes some fibrosis and the secretory apparatus may apparently be affected, so that sometimes there is persistent albuminuria. The kidney heals with scars corresponding to the fissures and infarcts.

"The symptoms of rupture of the kidney are hematuria, pain in the kidney region and tumor. There is often anemia and collapse, if the peritoneum is torn, the symptoms of peritonitis and if other organs are injured the symptoms appropriate thereto. Ureteral colic and vesical pain may oc-

cur as the consequence of obstruction by blood-clots.

"Tumor is due to the extravasation of blood or of blood and urine. It is in the kidney region, and the rapidity with which it increases in size is a rough index of the severity of kidney injury. There is no tumor when the peritoneum is torn and secondary rupture of the peritoneum may lead to a rapid disappearance of the tumor."

The point for discussion and interest in this case centers around the treatment of hematuria in children following injury to the lumbar region. In the surgical records of Johns Hopkins Hospital there are reported eleven cases of rupture of the kidney among 62,000 surgical cases. One case of kidney injury of lesser degree can apparently be expected in 2,000 surgical cases. In 701 cases of injury to the kidney, treated by both operative and non-operative methods, the mortality was 18.6 per cent which indicates the seriousness of this condition.

Young states that "Since many kidney injuries are slight and are recovered from without operation the question arises in each case whether operation is indicated. In some cases the injuries are so extensive and the shock so great that nothing can be of any avail. Experience is the only guide in such instances. In any case, if primary traumatic shock is present, it should be combated by the well known measures, rest, morphine, heat and fluid. Transfusion of blood may be necessary. The indications for operation are (1) signs of peritoneal involvement, especially free fluid, (2) rapidly increasing signs of hemorrhage, either primary or secondary, pallor, fall of blood pressure, tachycardia, increasing size of tumefaction, or loss of much blood with the urine, and (3) signs of infection (fever, leukocytosis, prostration). If expectant treatment is decided on, every effort should be made to avoid infecting the bladder and to keep the patient absolutely quiet. He must also be closely watched, as operation should not be delayed if infection supervenes, or the loss of blood becomes dangerous. By waiting too long a stage may be reached in which the patient's powers of resistance are so lowered that he has little chance of withstanding the operation."

If there is time before the operation, the functional capacity of the supposedly sound kidney should be investigated. Instrumentation of the urethra is contraindicated because of the danger of infection. Consequently, cystoscopy should not be performed. Intravenous urography, however, can be used to determine the presence and function of the other kidney, and the degree of damage to the injured kidney.

How long should one use conservative methods

in cases where profuse hematuria persists? In this case twelve days elapsed between the injury and the exploratory operation. The patient became weak and anemic and was not a good surgical risk, even after the blood transfusion. After three or four days of conservative treatment in such cases where hematuria persists, with tumefaction in the lumbar region, an exploratory operation should be done without further delay, in an effort to control the hemorrhage and prevent infection.

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### SUBMUCOUS LIPOMA OF THE CECUM REPORT OF A CASE

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This case is presented because one rarely finds a tumor of this type attaining so large a size, and because it was unusually well demonstrated by x-ray.

The patient was a white, married woman, fifty-three years of age. Five years ago her uterus was removed because of a small, carcinomatous polyp projecting from the cervix. She remained well for four years, when vague pains appeared at long intervals in the mid-abdomen. Six months after the onset, constipation began, and became gradually more severe. One month before she consulted her physician, the pain increased in severity, starting in the umbilical region, and spreading throughout the abdomen. Nausea was also present. This syndrome persisted intermittently for a month, when there was an attack of severe colicky pain, with onset and radiation as above, associated this time with vomiting and abdominal distention. A diagnosis of partial intestinal obstruction was made. Symptoms subsided promptly with medical management.

On March 5, 1934, a month after the above episode, the patient was referred to us for gastrointestinal studies, by Dr. William B. Chase, Sr. The patient did not appear ill, and had no symptoms at that time, except for a somewhat weak feeling. A weight loss of a few pounds was attributed to the curtailment of food since her severe attack. There was no anemia. There was a palpable mass in the region of the cecum, about eight centimeters in diameter, fairly soft, smooth, movable, and not tender.

Barium enema filled the colon normally, except for the cecum, which appeared dilated, and showed barium distributed thinly over the mucosa, but failing to fill the lumen. The cecum corresponded to the palpable mass. Prolonged manipulation and observation of the cecum failed to show any change in its appearance. The accompanying



roentgenogram shows the typical polypoid nature of the growth. Barium by mouth showed no obstruction at the ileocecal valve.

Operation was performed by Dr. Frank Fordyce on March 14, 1934. A large solid mass was found inside the cecum, with a smooth capsule, attached by a broad base, and having a benign appearance. The tumor seemed to fill the lumen



Figure 1. X-ray of the colon showing the large polypoid tumor filling the entire cecum.

completely. The patient's condition was excellent, and since the tumor could not be excised because of its broad base of attachment, a one-stage resection was performed, with end to side anastomosis of the ileum and colon. The patient had an uneventful convalescence, left the hospital eighteen days after the operation, and was perfectly well when last seen on September 17, 1934.

The pathologic report of Dr. Julius Weingart was as follows: "Inside the cecum is a large pyriform mass, measuring ten centimeters in length, and five and one-half centimeters in diameter at the widest part. It is covered with smoothed-out mucosa, and on section shows a fatty interior. There are four smaller collections of fat in the ascending colon, just above the cecum, underneath the mucosa. They measure two centimeters transversely, and one centimeter longitudinally. Diagnosis: submucous lipoma of the cecum."

#### COMMENT

DeLuca and Henstell reported a case of submucous lipoma of the cecum in the *Journal of the American Medical Association*, July 22, 1933. The tumor measured five centimeters in diameter, and x-ray films had shown infiltration of the wall of the colon at the hepatic flexure with canalization, and with dilatation of the transverse colon. The findings were suggestive of carcinoma. Many of the earlier reports record similar findings.

Lipomata of the gastro-intestinal tract are uncommon. Hiller in 1899 collected 23 cases. Dewis soon after reported 44 cases. In 1909 Stetten reported 72. In 1930 Comfort made the next comprehensive review of all cases reported in the international literature. There were 181 cases, of which 114 had caused symptoms. The remainder were found at autopsy, or incidentally at operation for other conditions. Of the cases with symptoms, the location of the tumor was as follows: stomach, five; small intestine, thirty-four; colon, seventy-four; and intestinal, region not stated, one. A lipoma occurring in the cecum alone was reported in sixteen cases, of which twelve caused symptoms.

Multiple lipomata or subserous lipomata very rarely occur. There have been a few cases of

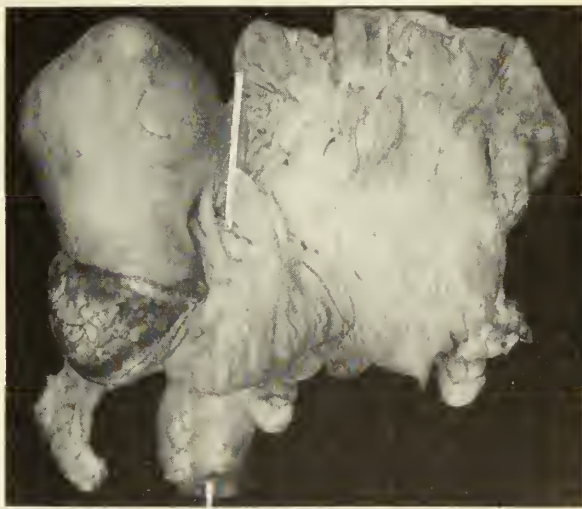


Figure 2. Photograph of the gross specimen showing the cecum laid open; a probe through the ileocecal valve; the appendix; and a section through the tumor to demonstrate its fatty interior.

submucous and of subserous lipomata occurring in the same bowel. Two cases of lipoma with symptoms occurred in persons under twenty years of age, although 72 per cent were in people over forty years of age.

The symptoms are variable and not diagnostic. They include vague abdominal pains, bleeding, and obstruction at the pylorus or in the small or large

bowel. Bowel obstruction is usually due to intussusception, because of interference with peristalsis, although obstruction may sometimes be due to the size of the tumor itself, or because it becomes swollen from interference with the local blood supply. The obstruction in our case could have been due to either of these mechanisms. Preoperative diagnosis is usually cancer or appendicitis, more often the former. Occasionally, as in this case, the tumor can be demonstrated by x-ray to be of the polypoid type.

Long duration of symptoms, or the finding of a polypoid tumor, may suggest a benign lesion. However, the most common polypoid tumor of the colon is an adenoma, which has a marked tendency to malignant degeneration. Moreover, loss of weight, bleeding, and occurrence in the cancer age, make it impossible in many cases to rule out malignancy. Occasionally the tumor is rectal, or prolapses into the rectum, or protrudes through the anus, and it may be possible to recognize it as a fatty tumor. At operation, the softness, the pear-shape, and the yellow color (in some of the larger tumors the muscular layer is thinned out and the color of the fat is apparent along the line of attachment), should suggest the nature of the tumor, and excision of the lipoma, instead of resection of the bowel with its greater risk, can sometimes be accomplished.

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### THE FINLEY HOSPITAL CLINICO-PATHOLOGIC CONFERENCE

#### A CASE REPORT OF SPONTANEOUS HYPOGLYCEMIA

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Recent literature, especially the report of Rynearson and Moersch<sup>1</sup> has emphasized the predominance of the neurologic manifestations which occur in hyperinsulinism and other hypoglycemic states. The following case report of spontaneous hypoglycemia illustrates this neurologic symptom complex which dominates the clinical picture so common in these cases.

#### CASE REPORT

The patient, a Jewish woman, forty-one years of age, was first seen at the office on November 6, 1934. She complained of dizziness, attacks of sweating, hot flashes, and inability to "get going" with her work during the morning hours.

*Past history:* In 1933 a hysterectomy was done for a fibroid uterus with retention of the left ovary. The patient is the mother of two children. One of the children died four years ago following a tonsillectomy; the other child is two years old having been a trying care since birth because of congenital abnormalities.

*Physical examination:* The patient's temperature was 99.4 degrees; the pulse 72 and the respirations 22 per minute. The blood pressure was 152/90. The hemoglobin was 95 per cent. The urine was negative for albumin and sugar. The patient, a very thin, nervous woman showed no evidence of pathology on routine examination. At that time her symptoms were considered to be due to menopausal changes. She was advised to rest as much as possible, and glandular therapy was instituted.

She was next seen at her home December 2, 1934, at 5:30 p. m. because she was unconscious. Her husband stated that she had not complained of any distress during the day but that she had been busy preparing dinner for several guests that evening. He also stated that she ate practically no breakfast and that she went without lunch during the noon hour. At the evening dinner she only ate an artichoke salad. She then left the table and it was noticed that she was carrying an empty pan in an awkward and purposeless manner. Shortly after she perspired profusely and then became unconscious. On examination at that time the blood pressure was 138/90; the pulse 70 and the axillary temperature was 96.4 degrees. Twitching of the face muscles and a lateral nystagmus were pronounced. The heart and lungs were normal. The reflexes at first were exaggerated but within fifteen minutes a bilateral paralysis of the legs and arms developed. She vomited parts of the salad she had eaten several times between 7:00 and 8:00 o'clock. At 10:00 p. m. she regained consciousness having been unconscious for four and three-fourths hours. The paralysis disappeared and she talked rationally, but complained of a headache and a tired-out feeling. She took frequent sips of water, rested and slept most of the night with the aid of a hypodermic of Dilaudid. At this time hysteria, exhaustion and brain tumor were considered as possible diagnoses. The impressive part of the clinical picture was the pre-



dominating neurologic symptoms coming on so suddenly.

When seen early the next morning there was no paralysis, the reflexes were normal, and she felt well. Fluids and enemas were ordered and instructions given for complete rest. At 5:00 p. m. she had another seizure of marked restlessness and sweating. At the beginning of this attack there was no paralysis, but difficulty in swallowing soon developed and she again lapsed into unconsciousness. At 11:00 p. m. she was in a deep coma and there was a right-sided hemiplegia with a positive Babinski sign. As she did not void, catheterization was necessary. A special examination of the eye grounds was made the next day with the following finding: "There was periodic outward rotation of the left eye ball. The pupils were unequal (the right three millimeters, the left two millimeters wide), but reacted well to light. The media were clear; the discs showed good physiologic cupping with a slight haze of the upper and lower edges. The blood vessels were normal. There was no evidence of increased intracranial pressure or central irritation of the left abducent nerve."

Because of the coma, nutrient enemas of milk, sugar and whiskey were given at four hour intervals. Petechial hemorrhages appeared over the chest. A spinal tap was done during the afternoon and twenty-five c.c. of clear, colorless fluid was obtained under reduced pressure. The cell count showed five mononuclear cells per cu. mm. At 9:00 o'clock that night the respirations were labored, the pupils were dilated, and she was perspiring freely. An intravenous injection of fifty per cent glucose solution was started but when five c.c. had been given death seemed so inevitable that the injection was stopped. She soon rallied, tried to talk and to use the left hand. Because of the unexpected improvement fifteen c.c. more of the glucose solution was injected and at its conclusion the paralysis of the legs and arms disappeared and the Babinski sign became negative. The blood for the blood sugar was not drawn until after the intravenous glucose had been given. It was then found to be only 71 mgs. per 100 c.c. (normal 90-120 mgs.). The spinal fluid was found to be sugar free but otherwise negative. Large amounts of orange juice and sugar were ordered for the patient. The following morning the blood pressure was 128/90 and there was no paralysis. The right pupil was dilated and there was some slurring of speech, but her general condition was greatly improved. Catheterization was still necessary. During the next five days there was steady improvement. The petechial hemorrhages and the slurring of speech disappeared on the sixth day

and the right pupil became normal on the eighth day after the onset. Under the high sugar diet the blood sugar gradually rose to 88 mgs. per 100 cc. of blood. There was steady gain in strength and she had no further attacks of weakness and sweating. She left to visit relatives in Salt Lake City on the thirteenth day after the original attack.

#### DISCUSSION

The diagnosis of spontaneous hypoglycemia was made in this case first, because of the low blood sugar level even after the administration of 20 c.c. of a 50 per cent glucose solution; second, because of the absence of sugar in the spinal fluid taken during the period of coma; third, because of the pronounced neurologic symptoms; and fourth, because of the almost instantaneous improvement following the administration of glucose. The spontaneous hypoglycemic symptom complex results from a deficiency of blood sugar. Diabetes, in which there is an excessively high blood sugar, is the direct opposite of spontaneous hypoglycemia.

The recognition of spontaneous hypoglycemia is of a relatively recent occurrence and our knowledge of the symptom complex dates back to the discovery of insulin in 1921. In 1924 Harris<sup>2</sup> coined the term hyperinsulinism but up until 1927 a typical case had not been reported. In 1927 Wilder<sup>3</sup> reported the case of a physician who suffered and died from spontaneous hypoglycemia which was caused by carcinoma of the insular tissue of the pancreas. Since that time a large number of cases due to various causes have been reported and practically all of them had pronounced neurologic symptoms. In 1933 Wauchope<sup>4</sup> formulated a classification of the causes of hypoglycemia, which is as follows:

1. Excess of insulin: This may be the result of therapeutic injections of insulin, of tumor or hyperplasia of the pancreas, or of functional hyperinsulinism (idiopathic hypoglycemia).

2. Lack of opposing secretions: This condition may result from disease of the suprarenal glands, from tumors of the anterior or posterior lobe of the pituitary body, or from myxedema.

3. Lack of glycogen: This lack may result from destruction of reservoirs, from disease of the liver or wasting of muscles, from abnormal secretion of sugar, from renal diabetes, from lactation, from active depletion of stores such as occurs in muscular exercise and from failure to replenish stores as in starvation.

4. Interference with the regulating center: This may result from another nervous disease which affects the pons, or from over-stimulation of the vagus nerves.

It is well to remember that patients with hypoglycemia have the same symptoms as do those diabetic patients who receive an excess of insulin. As in this case, response is rapid after the injection of carbohydrate food. Ryneerson and Moersch<sup>1</sup> emphasized the predominance of neurologic symptoms in this condition and in their review listed the nervous manifestations and classified the symptoms in the various cases which have been reported as follows: weakness and prostration, fatigue, stupor, coma, muscular twitchings, convulsions, loss of memory, sweating, change in general behavior, disturbances of speech, nervousness, restlessness, mania, mental confusion, epileptiform seizures, ocular symptoms such as diplopia, dimness of vision, dilated pupils, blurred vision, unequal or miotic pupils, vertigo, dulness and listlessness, nausea, vomiting, headache, drowsiness, fainting, tremors, epigastric pains, positive Babinski sign, paresthesia, loss of sphincteric control, irrationality, emotional instability, foaming at the mouth, pallor and fear of death. Just why these nervous and mental symptoms are produced by hypoglycemia is not known. Olmsted and Logan<sup>5</sup> believe that insulin convulsions are caused by the action of insulin on the bulbar centers. They have also brought forward evidence to support the hypothesis of the antagonism of the pituitary solution to insulin. The Babinski sign is positive when the blood sugar is low but disappears just as soon as the blood sugar becomes elevated. This is quite a common finding.

In the differential diagnosis, because of the prominence of the nervous symptoms, it is necessary to consider the following conditions: epilepsy, acute alcoholism, brain tumor, insanity, neurasthenia, hysteria, and mental disorders. Strain, fatigue and the irregular intake of food are etiologic factors in bringing on these attacks and the diagnosis must of necessity depend upon repeated blood sugar estimations.

As to treatment, the reports in the literature indicate that medical treatment has not always been satisfactory, although it may cause temporary palliation of symptoms. Certainly in those cases which do not respond to medical treatment, surgical intervention should be advised in order to determine whether the condition is caused by a pancreatic adenoma or carcinoma. Therefore, if attacks cannot be controlled by frequent feedings and an excess of glucose, surgical investigation is necessary, especially as it is attended with negligible risk.

It is well to note that in this case, the patient was at a time of life when there is likely to be a

disturbed hormonal balance. The first attack was undoubtedly precipitated partly by this factor as well as the strain of preparing dinner without taking adequate nourishment. The case is presented to the staff so that it may be kept in mind and considered in patients with peculiar nervous manifestations. Probably many cases of spontaneous hypoglycemia have gone unrecognized, because blood sugar determinations were neglected.

#### SUMMARY

1. A case of spontaneous hypoglycemia with neurologic symptoms has been presented.
2. A brief summary of the literature and an etiologic classification has been given.
3. Accurate diagnosis is essential for proper treatment. Therefore, all cases with vague nervous symptoms should be given the benefit of numerous blood sugar determinations, by which hypoglycemia can be diagnosed.
4. The treatment is either medical or surgical. When the hypoglycemia is uncontrolled by medical treatment, surgical investigation of the pancreas is advisable.

Note: I wish to express my appreciation to Drs. John A. Thorson, Donald C. Conzett and Laurence E. Cooley, for their aid in the solution of this case.

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#### PRE-CONVENTION GOLF TOURNAMENT

Dr. Raymond E. Peck of Davenport, chairman of the local entertainment committee for the Eighty-fourth Annual Session of the Iowa State Medical Society, has announced plans for a golf tournament to be held on Tuesday, May 7, the day before the general sessions convene. The Rock Island Arsenal Golf Club, through its president, Colonel A. G. Gillespie, has extended the society the privilege of using the course on this afternoon. It is proposed to pair the entries in foursomes and to play eighteen holes during the afternoon. A smoker dinner will be held at the Club after the tournament, at which time appropriate prizes will be given. It is hoped that ten or more foursomes will participate in the event, and all those interested should communicate with Dr. Peck at an early date, so that final arrangements can be completed.



# STATE DEPARTMENT OF HEALTH



## Revision of Rules and Regulations

Rules and regulations of the Iowa State Department of Health relating to communicable and other reportable diseases, are being revised at this time. The last revision occurred in 1931. In making certain changes and additions in the regulations, due regard is being given to suggestions which have come from physicians and local health officers. The Committee on Child Health and Protection of the Iowa State Medical Society, at a meeting held recently, discussed the present regulations as affecting diphtheria, measles, scarlet fever and other communicable diseases. The suggestions of this Committee are appreciated and have received careful consideration. In connection with the work of revision, use has been made of an outline of "Quarantine and Disinfection," prepared by M. E. Barnes, professor of hygiene, preventive medicine and bacteriology at the State University of Iowa. The volume entitled "Communicable Disease Control of the White House Conference on Child Health and Protection" has received thorough study, as have "Laws, Rules and Regulations Relating to Public Health" of the Kansas State Board of Health and the "Minnesota State Health Laws and Regulations."

Proposed changes as affecting various communicable diseases and which are being submitted to the State Board of Health, are summarized as follows:

*Chickenpox:* The period of isolation of the case to be "a minimum period of ten (instead of fourteen) days and until complete return of continuity of the skin."

*Diphtheria:* The term "toxin-antitoxin" to be replaced by "one of the accepted diphtheria preventive agents."

*Epidemic Encephalitis:* Premises to be kept under quarantine for twenty-one days with regulations similar to those which pertain to poliomyelitis.

*German Measles:* No placard. Patient to be isolated seven days. No restriction of susceptible contacts until onset of symptoms.

*Measles:* Susceptible children in a home with measles, to continue in school for seven days and then to remain at home until the seventeenth day after first exposure. Under "general measures" (on page 35 of R. & R. for 1931), paragraph (6) has been added, to read as follows: "(6) The use of parental whole blood or other approved biological product for known contacts, is recommended. This will either prevent measles or (preferably) permit a mild attack which will render the child immune to a future attack of the disease."

*Mumps:* Susceptible contacts to be excluded from the sixteenth to the twenty-sixth day after first exposure.

*Psittacosis:* Investigation of source of infection, isolation of patient and concurrent disinfection of discharges. Quarantine of premises which house infected birds, until thorough disinfection has been carried out. Section 15½ U. S. Interstate Quarantine Regulations, reads as follows: "Transportation of Parrots, Parrakeets and Other Birds of the Psittacine Family.

"15½. No person, firm or corporation shall offer for shipment in interstate traffic, and no common carrier shall accept for shipment or transport in interstate traffic, any parrot, parrakeet, love bird, macaw, cockatoo, lory, lorikeet or any other bird of the parrot or psittacine family unless an accompanying certificate has been obtained from the state health authority to the effect that to the best of knowledge and belief of such authority such bird as may be offered for shipment has originated from an aviary, or other distributing establishment, free from psittacosis infection, as determined by inspection of birds and the environment in which they have been reared and housed, the history of such establishment as regards psittacosis infection, supplemented by such laboratory examination of birds, selected by a representative of the certifying authority, as may be deemed necessary to enable the certifying authority to determine that the birds offered for shipment are

free from psittacosis infection; provided, that no bird of the species above mentioned that is under eight months of age shall be offered or accepted for shipment or transport in interstate traffic.

"Certificates accompanying shipment of psittacine birds transported under provisions of this section shall be surrendered by the common carrier to the health authorities at the destination of the shipment."

*Scarlet Fever:* The regular period of quarantine to be reduced from twenty-eight to twenty-one days.

*Typhoid Fever:* Premises to be made subject to placard for minimum period of two weeks. Yellow fever, cholera and leprosy, if reported, not to be subject to quarantine.

Further suggestions or criticisms designed to improve the revised edition of Rules and Regulations, are desired. Kindly address communications to the State Department of Health, Des Moines, Iowa.

#### THE VALUE OF PLACARDING

The placarding of premises for communicable diseases such as measles and whooping cough is regarded as of value for two reasons, both of which should be of interest and make their appeal to parents.

1. Placarding protects the patient against the public.

Isolation is likely to be observed more effectively in a home under placard. As a result complications due to secondary or other respiratory infections introduced by outsiders, may be less likely to develop.

2. Placarding of benefit to susceptible children.

If warning signs or placards were not used in a community, parents might fail to realize that measles and whooping cough were unduly prevalent, unless warned by physicians, by nurses in home visits and by notices in daily or weekly newspapers. Warning signs are an effective means of informing the public of disease prevalence. Such warning should stimulate interest in preventive measures and thus benefit susceptible persons in the community.

#### THE LOST SHEEP

The above title was suggested by the morbidity report of the State Department of Health for the week ending Thursday, November 15, 1934, when there were reported 99 cases of chickenpox and one of smallpox.

The number of reported cases of smallpox has decreased in a remarkable manner since 1930.

This is apparent from the figures in the following table which indicate the total number of cases of smallpox and chickenpox reported yearly in Iowa, during the five-year period, 1930 to 1934, inclusive:

TABLE I

Year	Smallpox Cases	Chicken- pox Cases
1930	3044	2252
1931	2225	2728
1932	1171	2172
1933	719	1817
1934	166	2952

It will be noted that in 1934, more cases of chickenpox were reported than in any previous year of the five-year period. The striking thing, however, is the fact that during 1934, only 166 cases of smallpox were reported.

The number of deaths attributed to smallpox and chickenpox during the 1930-1934 period, is shown in the following table:

TABLE II

Year	Smallpox Deaths	Chicken- pox Deaths
1930	5	2
1931	7	3
1932	2	0
1933	0	1
1934 (11 months)	1	3

During the first eleven months of 1934, only one death was recorded as resulting from smallpox. On the other hand, chickenpox was the stated cause of three deaths. The fact that more fatalities in 1934 resulted from chickenpox than from smallpox suggests the possibility of error in differential diagnosis.

How can we account for the tremendous decrease in the reported incidence or prevalence of smallpox? Smallpox vaccination projects have been carried out in a number of communities in the state, in recent years. It is probable, however, that considering the state as a whole, only a small percentage of children in the elementary grades, would be found on examination to show evidence of successful vaccination. The paltry number of reported cases is not to be interpreted, therefore, as evidence that smallpox failed to spread because of lack of susceptible material.

One significant reason why so few cases of smallpox are being reported, is doubtless the failure on the part of families concerned, to secure medical attention. There has been a tendency to neglect calling a physician except in case of severe illness. From time to time, the attention of the State Department of Health is directed by physicians or local health officers, to an outbreak of smallpox in a rural area. Investigation has shown



on more than one occasion that epidemics of smallpox have affected entire school districts, without physicians being called in attendance. As a result, cases have not been reported and there has been no semblance of quarantine.

It is apparent that 166 cases of smallpox fail to represent anything like a true index of the prevalence of this disease. It is obvious also that Iowa will not rid herself of the stigma of smallpox through a practice of evasion or concealment. Neither can there be any real advantage in confusing two diseases which happen to have a slight similarity. The lost sheep must be found and restored to the fold. Only in this way (through knowledge of disease prevalence) can we hope to persuade our people of the vital importance of successful vaccination and revaccination, applied to the great majority. As soon as this end can be attained, the parable of the lost sheep as relating to smallpox, will no longer be applicable, since there will then be no such animal.

PREVALENCE OF DISEASE				Most Cases Reported From
	Dec. '34	Nov. '34	Dec. '33	
Diphtheria .....	36	51	56	Black Hawk, Polk
Scarlet Fever .....	246	285	350	Polk, Story
Typhoid Fever .....	14	11	16	Dallas, Van Buren
Smallpox .....	9	5	20	Cerro Gordo
Measles .....	3081	905	143	Black Hawk, Muscatine, Lee
Whooping Cough..	59	51	71	Lee, Woodbury
Cerebrospinal				
Meningitis .....	4	2	4	(For State)
Chickenpox .....	476	485	347	(For State)
Mumps .....	342	203	100	Dubuque
Poliomyelitis .....	2	5	2	Lee, Pocahontas
Tuberculosis .....	18	25	18	(For State)
Undulant Fever ..	7	18	5	(For State)
Syphilis .....	125	105	129	(For State)
Gonorrhea .....	151	182	183	(For State)

CHRISTIAN SCIENTISTS OPPOSE STATE MEDICINE

Of interest to the medical profession is an editorial which recently appeared in the *Christian Science Monitor*, in which the Christian Scientists take a firm stand against the recent trends toward the socialization of medicine. Terming state medicine "medical peonage," the editorial states that the system is "strangely foreign to the legend of the family doctor, who worked under the motto, 'To each according to his need; from each according to his means.' The family physician who brought kindness, ready sympathy and unselfish service . . . has been passing from the American scene; more and more his place has been taken by a complex mechanism, a highly departmentalized professionalism, with impersonal efficiency its dominating sentiment."

The *Illinois Medical Journal*, commenting on the editorial, says, "When the arch-foe of scientific medicine, the sect of Christian Scientists, comes out flatly against state medicine, not because this monstrous jape is medicine, but because it is political jobbery spawned by chaos and communism, then indeed would *le dernier mot* appear to have been spoken!"

COLLECTION AGENCY NOT APPROVED

Several inquiries have recently been received at the central office from members of the Society, regarding the Affiliated Underwriters Loan and Finance Company, and the Birdsell Loan and Finance Company, Inc., of Evanston, Illinois. Information in the files of the Bureau of Medical Economics of the American Medical Association shows that these two companies are officered in many instances by the same persons. The Bureau reports that photostatic copies of the articles of incorporation of the two companies show them to be similar in detail. For information concerning the Birdsell Loan and Finance Co., Inc., we would refer you to the March 31, 1934, issues of the Journal of the American Medical Association, page 1087. Neither of these companies has been granted the approval of the Committee on Medical Economics of the Iowa State Medical Society.

SECTIONAL MEETING, AMERICAN COLLEGE OF SURGEONS

The 1935 sectional meeting of the American College of Surgeons will be held in Kansas City, Missouri, on Tuesday and Wednesday, March 12 and 13, with headquarters at the Hotel President. This group includes physicians in Missouri, Kansas, Arkansas, Iowa, Nebraska, Oklahoma, and Colorado. An active committee on local arrangements, with Dr. Michael J. Owens as chairman, and Dr. James R. McVay as secretary, has plans well in hand for an excellent meeting.

The spring meeting of the Kansas City Southwest Clinical Society will be held in conjunction with the above session, beginning on Monday, March 11. No registration fee will be charged for this three day meeting, and a cordial invitation to attend this most interesting meeting is extended not only to the fellows of the various states, but to the entire medical profession at large.

GASTRO-ENTEROLOGICAL ASSOCIATION ADOPTS OFFICIAL PUBLICATION

During the early months of 1934, *The American Journal of Digestive Diseases* first appeared as a publication devoted exclusively to medical and surgical articles dealing with diseases of digestion.

Now comes the announcement that this journal is also to be the official publication of the American Gastro-Enterological Association. The president of this society, Dr. B. B. Vincent Lyon of Philadelphia, says of the new combination, "Other domestic and international journals of gastro-enterology have heretofore sporadically appeared for brief periods and 'died aborning,' but we predict that this Journal will have a brilliant future so long as it continues to maintain its high standard of editorial supervision of accepted manuscripts and other subject matter, and thus will serve to fill a much needed void."

# The JOURNAL of the Iowa State Medical Society

ISSUED MONTHLY

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RALPH R. SIMMONS, Editor.....Des Moines

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OFFICE OF PUBLICATION, DES MOINES, IOWA

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## MEDICAL RELIEF IN IOWA

Because the number of families on relief in the state of Iowa has increased far above the normal number of statutory poor, many of the counties have entirely exhausted their poor relief funds. Up to the present time, only limited federal funds have been used for medical relief needs in Iowa, but the necessity for additional funds seems inevitable. For the past few months, officials of the Iowa State Medical Society and the Iowa Emergency Relief Administration have been discussing plans whereby it would be possible to use state and federal funds for medical relief.

As a result of these deliberations and at the suggestion of Harry L. Hopkins, Federal Relief Administrator, Dr. K. E. Miller, Senior Surgeon of the United States Public Health Service was sent to Iowa. After spending several days here, surveying medical relief problems and meeting with the officers, the Council, and the Medical Economics Committee of the Iowa State Medical Society, Dr. Miller reported to the Surgeon General of the United States Public Health Service, and his report read in part:

"Definite objectives are as follows: first, an agreement on the principle of employing a full-time medical referee; and second, a decision to make the employment of the medical referee the first order of business."

This portion of Dr. Miller's report was considered a recommendation and Dr. T. C. Denny of Des Moines was chosen to fill the position of medical referee. Dr. Denny will be the direct representative of E. H. Mulock, Chairman of the Iowa Emergency Relief Administration, and his duty will be to establish an organization which will handle medical relief in Iowa, coordinating all county, state, and federal relief agencies.

The Iowa State Medical Society is very fortunate in having Dr. Denny selected for this position. He was graduated from the Jefferson Medical College in 1912, and was appointed assistant medical director of the Central Life Insurance Company of Iowa in 1913. For the next nineteen years, Dr. Denny held various executive positions in this organization, serving as president from 1927 to 1932. He has been a member of several national committees and boards of life insurance companies during his many years of service. Dr. Denny was honored by being elected president of the Des Moines Chamber of Commerce in 1933. He was also named as president of the Greater Des Moines Committee for 1934, and for his voluntary and unselfish service, and his time and efforts so generously devoted on behalf of public enterprises, was given the Des Moines *Tribune's* Community Service Award for 1934.

At the time the JOURNAL is going to press, plans for medical relief are not yet completed. It is felt, however, that within the next few days a definite program may be announced by the Iowa Emergency Relief Administration for medical relief in those counties which can no longer carry the financial burden of their relief activities. We hope to publish these plans in subsequent issues of the JOURNAL for the information of our readers. We have every reason to believe that these plans will be satisfactory to local, state and federal governments as well as the medical profession.

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## SPECIAL MEDICAL BROADCAST PROGRAM

Iowa physicians will be particularly interested in a recently announced medical broadcast program to be given over the National Broadcasting Company's network of stations on Monday, February 18, beginning at 5:00 p. m., central standard time. Of the three distinguished speakers, Dr. Walter L. Bierring of Des Moines, president of the American Medical Association, is given a position of honor and will open the broadcast, speaking on the topic, "Advancement of Medical Education." Following Dr. Bierring will be Dr. Ray Lyman Wilbur, whose subject will be "The Prolongation of Life," and Dr. Kendall Emerson, who will speak on "The Battle Against Tuberculosis." The speakers will be introduced by Dr. Morris Fishbein, editor of the *Journal of the American Medical Association*. Radio station KSO of Des Moines will carry this broadcast and it is possible that the program may be heard over the other Iowa stations, although we do not at this time have definite information to this effect. We suggest that Iowa physicians watch the daily newspapers for the announcement of this program.



### GENERAL HEALTH GOOD IN 1934

During the past four or five years we have, from time to time, received alarming advice from many sources to the effect that the health of the public has shown marked deterioration since 1919 and that this deterioration corresponds proportionately to the severity of the economic depression. This statement has been questioned more recently, but a warning has been given that a marked deterioration in public health, especially from tuberculosis, should be expected at a future time. These alarming suggestions have to date fallen short of realization, and reliable statistics do not sustain these dire predictions. There is as yet no evidence that the depressed economic conditions of the past few years have lowered the general health of the people of the United States. This statement seems fully supported by the investigations of the Surgeon General of the United States Public Health Service as revealed in his recent annual health accounting to Congress. While death rates are available from year to year as an index to health, the Surgeon General has not relied upon these rates alone, but has instituted special studies of actual sickness over a period of several years, beginning in 1929, in ten localities where the depression has been most severe. These studies show higher sickness rates in the economic group rated in comfortable circumstances in 1929, but subsequently reduced to the lower economic class. The most important reasons given for the continuation of general good health are the vast work of the relief agencies and the fortunate absence of wide-spread epidemics.

It is interesting to note that for the calendar year 1933, the general death rate, 10.5 per 1,000 population, was the lowest ever recorded in the United States, and the rate for 1932 was next lowest, with 10.8 per 1,000. While health conditions remained comparatively good for the first half of 1934, the death rates for many localities were higher than those for the preceding year.

In spite of the economic conditions, the number of deaths from tuberculosis continued to decrease. For the calendar year 1933, the death rate was 59 per 100,000 population, five per cent below the previous low minimum. The typhoid fever death rate was also the lowest ever recorded, only 3.5 deaths per 100,000, which was eight per cent below the previous minimum. The diphtheria rate dropped to 3.9 per 100,000—also the lowest death rate ever recorded by the Public Health Service for this disease.

Although there were no wide-spread epidemics during the year under report, there were three major local epidemics. An unusual outbreak of

amebic dysentery occurred in Chicago in 1933 during the Century of Progress Exposition. Many people became ill after returning to their homes, but no secondary epidemic was reported outside of Chicago. Approximately 700 cases occurred or originated in Chicago. The epidemic was caused by defective plumbing. An outbreak of epidemic encephalitis, with some unusual clinical features, occurred in St. Louis and the surrounding country with about 1,100 cases and more than 200 deaths. California had an epidemic of poliomyelitis in 1934.

Smallpox, the principal scourge of mankind in the last century, still caused more than 75,000 deaths in countries sufficiently advanced in health matters to keep vital statistics records, but less than forty of these deaths occurred in the United States, although nearly 7,000 cases of the disease were reported. Several European countries have advanced so far in preventive activities that they did not have a single case of smallpox in 1933.

These observations concern only a five year period and, while definitely assuring, should not be accepted as the final measure of the effects of the economic depression on public health. If detrimental health factors have been set in motion by the unfavorable economic conditions of the past five years, they may be insidious in their effects and only be revealed in the mortality or morbidity statistics of a future time.

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### IS "DOC" RICHARD IN IOWA?

In a recent issue of *Minnesota Medicine* a notice from the Minnesota State Board of Medical Examiners discusses the operation of one Paul Richard, also known as "Doc" Richard, a Hindu healer at Myrtle, Minnesota, charged with a violation of the Basic Science Law prohibiting the practice of healing in Minnesota without license. Richard pled guilty and asked permission to leave the state rather than submit to prosecution. The story closes with the following interesting comment: "When last seen he was driving in the direction of the Iowa state line."

Minnesota's well formulated Basic Science Law commands respect, and, in this case, it is apparent that "Quack" Richard realized the certainty of his conviction under this act, since he gave up his practice without a struggle. We cannot help but wonder if the statement that Richard was headed for the Iowa state line is not significant. Iowa, without the security of a Basic Science Law, has inadequate protection against quacks. We know of instances in the past when it was quite apparent that unlicensed practitioners established them-

selves in Iowa when driven from their unlawful practices in other states.

It is interesting in this report of "Doc" Richard's activities in Minnesota to note that he had hoped to escape the law by failing to charge a fee for his services. Under the Minnesota Practice Acts it is distinctly stated that it is not necessary to charge a fee in order to violate the law. While not definitely written into the present Iowa statutes, the courts of this state have also always held that it is not necessary for a person to charge a fee before he can be prosecuted for practicing medicine without license. It is safe, therefore, to assume that, even under our present inadequate practice acts, quackery cannot dodge legal action by substituting voluntary gifts for fixed fees.

While we would not imply that Richard could establish his Hindu medicine in Iowa without prosecution, even under existing laws, we would point out the ease with which this situation was handled in Minnesota, due to the rigid definition of medical practice in that state as established by their Basic Science Law.

#### NEW RULING FOR OCULISTS

The tax law recognizes bandages, adhesive tape and other surgical dressings as necessary aids to the treatment of surgical conditions. It recognizes drugs and medicines as essential requisites of medical care. Singularly, it has designated eye glasses, prescribed and fitted by an oculist, as merchandise and therefore subject to the tax. A new ruling of the Iowa State Board of Assessment and Review, concerning oculists who supply their patients with glasses, distinctly clarifies and improves that part of Rule 10 discussing this subject. This ruling recognizes that glasses, specifically made to the requirements of the individual patient and prescribed by an oculist who is a graduate medical practitioner, are just as properly considered an adjunct to treatment as other medical or surgical supplies. It classifies the prescribed glasses as an "incident to professional service," thereby acknowledging that the oculist's charge is primarily for a medical service. The oculists no longer need to be half merchant and half physician. The amended ruling of the Iowa State Board of Assessment and Review follows:

January 17, 1935.

Rule 10 as adopted by this Board is hereby amended and changed as follows: that the following paragraph contained in said rule is hereby eliminated, canceled and declared of no further force and effect from and after January 1, 1935; viz:

"If he does supply his patients with eye glasses the sale of the eye glasses is subject to the tax," and in lieu thereof the following is added to said Rule 10: "When an oculist prescribes the use of eye glasses to his patients and said prescription is filled by an optical company, said transaction shall be classed as a service or an incident to his service, and the oculist shall be considered the ultimate consumer or user of said eye glasses and he be taxed accordingly."

In other words the optical company shall add the tax to the invoice to the oculist and the same shall be paid by him. All other matters contained in Rule 10 remain in full force and effect.

#### THE PERSONAL INCOME TAX AS IT AFFECTS PROFESSIONAL MEN

The January issue of the JOURNAL carried an article which explained the provisions of the new state personal income tax. Many physicians who read this account questioned the justice of certain statements as applied to the incomes of professional men. The article stated that the income tax should be based on *both* the cash income and accounts receivable. For the professional man, with the present poor collections, his accounts receivable are hardly representative of his actual income. The following letter from the Income Tax Division was secured to guide the members of the Iowa State Medical Society in computing their state income tax reports.

Dr. Robert L. Parker,  
Des Moines, Iowa.

Dear Sir:

At your request, we beg to inform you that professional men may report their income on either the cash or accrual basis. Notes or other evidences of indebtedness received in payment of services, and not merely as security for such payment, constitute income. Accounts collected in 1934 for 1933 and prior years, need not be included in gross income for 1934, inasmuch as the same became capital on January 1, 1934, and as such are not taxable for that year.

Yours truly,  
Corporation and Individual Income Tax  
Division

By C. H. Sayre, Assistant Director.

Attention is called to the fact that this opinion authorizes the doctor to figure his state income tax on the same basis as he does his federal income tax; that is, on his actual cash income for the calendar year. For the 1934 report this income should be based on only those accounts collected for work done in 1934.



## SPEAKERS BUREAU ACTIVITIES

### POSTGRADUATE COURSE

The Speakers Bureau is conducting a postgraduate course in Council Bluffs this spring, starting on February 11 and running through April 15. The meetings will be held in the Hotel Chieftain, with a dinner at six o'clock, the lecture following shortly before seven, concluding about nine o'clock. These arrangements have been made to conform to train schedules for the men returning to Chicago.

Many doctors have already enrolled for this course, but there is still room for others who desire to enter it. If you are interested, after reading the program outlined below, you can register by writing to Dr. S. D. Maiden of Council Bluffs, Iowa.

The program of the course is as follows:

### GENERAL THERAPEUTICS

Feb. 11.	Modern Treatment of Pneumonia.....	W. D. Sutliff, M.D., University of Chicago
Feb. 18.	Vaccine Therapy .....	H. A. Reimann, M.D., University of Minnesota
Feb. 25.	Radiotherapy .....	A. U. Desjardins, M.D., Mayo Clinic
Mar. 4.	Diets and Disease .....	Clifford J. Barborka, M.D., Chicago
Mar. 11.	Cardiac Therapy .....	S. Marx White, M.D., University of Minnesota
Mar. 18.	Diagnosis and Treatment of Common Skin Disorders.....	H. W. Michelson, M.D., Univ. of Minn.
Mar. 25.	Newer Things in Neurology and Psychology .....	Peter Bassoe, M.D., Rush Medical College
April 1.	Therapy of Gastro-Intestinal Diseases.....	Walter L. Palmer, M.D., University of Chicago
April 8.	Recent Advance in Therapeutics.....	Bernard Fantus, M.D., University of Illinois
April 15.	Present Day Treatment of Syphilis.....	Samuel W. Becker, M.D., University of Chicago

### HEALTH ESSAY CONTEST

The Speakers Bureau is cooperating with the Woman's Auxiliary to the Iowa State Medical Society in their second annual health essay contest. We feel that this is a very valuable educational project, and are glad to help the Auxiliary with this work. Further details about the contest may be found on the Woman's Auxiliary page in this magazine.

with the churches donating the auditoriums. Any group of doctors in any community could do likewise, and we will be happy to assist with plans and speakers. Write to us if you are interested.

### GRINNELL COURSE OF LECTURES

The course of health lectures which the Speakers Bureau is sponsoring in Grinnell is being enthusiastically received, in spite of bad roads and bad weather. The idea of having a series of lectures seems to be a good one.

If there is any other community in the state which would like to have such a series, we would be very glad to arrange one. This one in Grinnell is being sponsored by the Community Hospital Association,

### FEBRUARY RADIO SCHEDULE

	WOI, Wednesdays at 4 P. M.
	WSUI, Mondays, at 8 P. M.
February 6-11—Whooping Cough.	G. E. Harrison, M.D.
February 13-18—Goiter.	C. B. Luginbuhl, M.D.
February 20-25—Blood Pressure.	Edward W. Anderson, M.D.
Feb. 27-Mar. 4—Swimming Pool Sanitation.	A. H. Weeters.
March 6-11—The Pituitary Gland.	Joseph Brown, M.D.

# WOMAN'S AUXILIARY NEWS

*Edited by the Press and Publicity Committee*

MRS. OLIVER J. FAY, *Chairman*, 405 Thirty-seventh Street, Des Moines

## HEALTH ESSAY CONTEST

The Woman's Auxiliary to the Iowa State Medical Society is sponsoring its second annual health essay contest in the public high schools of the state. The contest last year aroused so much interest, and there were so many entries, that it was thought that the contest was very much worthwhile. If a serious interest in the problems of health can be aroused in young people through this essay contest, it is well worth the effort.

The rules of the contest are as follows:

1. Subject: Disease Prevention and Health Protection.

2. Length of Essay: Eight hundred to one thousand words.

3. Participants: Any student in the ninth, tenth, eleventh, or twelfth grades of the public schools of Iowa.

4. Prizes: First prize, \$25.00; second prize, \$10.00; third prize, \$5.00; and twenty prizes of \$1.00 each to the next twenty highest ranking essays. The Speakers Bureau is cooperating in this contest and offers an additional prize to the winner of first place of a trip to a centrally located broadcasting station, to present the winning essay over the radio.

5. Time: The contest will open February 15 and close April 1, 1935. This means that all essays must be in the hands of the chairman of the Contest Committee, Mrs. W. A. Seidler, Jamaica, Iowa, by April 1, 1935.

6. Elimination: The three best essays from each school may be submitted. These essays should be typewritten. Student's name should not appear anywhere on the essay, but the student's name, town, county, grade, and superintendent's name should be typed on a small piece of paper and clipped to the essay. Each essay received at the Contest Office will be given a number and no judge shall know to which student that number has been assigned.

7. Judges: Preliminary eliminations will be made by members of the Woman's Auxiliary. The final judges will be:

a. A member of the State Department of Public Instruction.

b. A member of the State Department of Health.

c. A member of the Iowa State Medical Society.

d. Two members of the Woman's Auxiliary to the Iowa State Medical Society.

8. Basis for Judging Essays: Originality, composition, and evidence of study.

9. The decision of the judges is to be final.

10. No essays are to be returned to their authors.

11. Reference Material: May be secured by writing to:

a. State Department of Health, Des Moines, Iowa.

b. R. K. Bliss, Extension Department, Ames, Iowa.

c. State Medical Library, Historical Building, Des Moines, Iowa.

12. Announcement: Will be made of the winners on April 15, 1935.

All county auxiliaries are urged to promote this contest in any way possible. The Speakers Bureau is cooperating by paying the expenses of a trip to a broadcasting station for the winner, and is also paying part of the prizes. We want to make this our own project, however, and hope eventually to pay all of the prizes from our own funds. Working toward that end, the Auxiliary to the Dallas-Guthrie Medical Society voted \$5.00 for this purpose. If the other county organizations would do likewise, we would not have to call upon the Speakers Bureau for assistance. We feel that this is an endeavor which is of great benefit to the students, and we wish to make it a permanent yearly contest. We hope, therefore, that all of the county groups will take under consideration the matter of raising funds for this contest. In addition, we need your help in publicizing this contest. If you can further interest in it in any way, we will count on you to do so.

## New Auxiliary in Cass County

At a meeting held in Atlantic, Thursday, December 6, a Woman's Auxiliary to the Cass County Medical Society was organized, and officers elected as follows: Mrs. R. A. Becker of Atlantic, president; Mrs. R. B. Chisholm of Griswold, vice president; and Mrs. H. E. Campbell of Anita, secretary and treasurer.

## Polk County Auxiliary Elects Officers

The Woman's Auxiliary to the Polk County Medical Society held a card party and election of officers Tuesday, January 22, at the Hotel Kirkwood. New officers are: Mrs. Lawrence E. Kelley, president; Mrs. Tom B. Throckmorton, vice president; Mrs. Douglas N. Gibson, secretary; Mrs. Cecil C. Jones, treasurer; and Mrs. C. A. Sones, chairman of the social committee.



## SOCIETY PROCEEDINGS

### Black Hawk County

Donald J. Wilson, M.D., of the University of Nebraska, Omaha, conducted a skin clinic for the Black Hawk County Medical Society, on the afternoon of Tuesday, January 15, and addressed the group after a six-thirty dinner on The Diagnosis and Treatment of Oral Lesions.

### Buchanan County Annual Meeting

The annual meeting of the Buchanan County Medical Society was held at the Hotel Gedney in Independence, Thursday, December 13. Dr. Gordon F. Harkness, president of the Iowa State Medical Society, delivered a very instructive and interesting address to a combined group of physicians, dentists and legislators. The proposed Basic Science Law was discussed and explained. Other problems of the State Society were mentioned, including the changing order of society and how the physician can best adapt himself to this change, and maintain a closer and more harmonious relation with the medical department of the State University. Dr. Harkness had a unique way of ascertaining the opinion of those present.

Officers elected at the business session include: Dr. John F. Loeck of Aurora, president; Dr. John W. Donnell of Hazelton, vice president, and Dr. N. L. Hersey of Independence, secretary and treasurer. M. C. Melrose, M.D., Secretary.

### Carroll County

Three physicians from Atlantic furnished the following scientific program for the Carroll County Medical Society at a meeting held in Carroll, Thursday, January 17: A Presentation of Fractures, Royal A. Becker, M.D.; Some Important Points in Biliary Surgery, Harvey A. Johnson, M.D.; and Roentgen Ray Considerations in Injury Cases, William S. Greenleaf.

### Cerro Gordo County

The Cerro Gordo County Medical Society sponsored an inter-professional meeting, which was held in Mason City, Tuesday, January 8. About one hundred were present at this meeting as members and guests of the Society. An informal program and talks by various members of the profession were given. No organization was effected. The Basic Science Law was discussed by R. D. Bernard, M.D., of Clarion. An excellent spirit was in evidence and we hope to have similar meetings at some future date.

H. W. Morgan, M.D., Secretary.

### Cherokee County

Members of the Cherokee County Medical Society held a joint meeting with the staff members of the Sioux Valley Hospital at the Hospital in Cherokee,

Monday, January 14. Leonard P. Ristine, M.D., spoke on Social Legislation in Regard to Medical Practice.

### Chickasaw County Annual Meeting

At a meeting held in New Hampton, Thursday, January 3, the following officers were elected to serve the Chickasaw County Medical Society during 1935: Dr. J. M. Kerwick of New Hampton, president; Dr. W. B. Dixon of Lawler, vice president; and Dr. John McDannell of Nashua, secretary and treasurer.

### Crawford County Annual Meeting

The annual election of officers for the Crawford County Medical Society was held in Denison, Wednesday, January 16, with the following results: Dr. E. M. Mark of Manilla, president; Dr. J. James Duffy of Denison, secretary and treasurer; Dr. Thomas L. Vineyard of Dow City, delegate; and Dr. Henry W. Clasen of Denison, alternate delegate.

### Dallas-Guthrie Society

The regular meeting of the Dallas-Guthrie Medical Society was held in Adel, Thursday, January 17. Immediately after the noon luncheon, W. A. Cooper, M.D., of Bayard, delivered his president's address; L. D. Powell, M.D., of Des Moines, as guest speaker for the society spoke on Non-functioning Gastro-enterostomy; and P. B. Glew, M.D., of Dallas Center, presented a paper on Salivary Calculi.

S. J. Brown, M.D., Secretary.

### Emmet-Dickinson Society

A joint meeting of the Emmet and Dickinson County Medical Societies was held in Estherville, Thursday, January 17, and the following program was presented: Tuberculous Pericarditis, M. G. Bourne, M.D., of Algona; and Foreign Bodies in the Lung, James A. Mueller, M.D., of Fenton. An address by Dr. Gordon F. Harkness, president of the State Society, was read by Dr. M. T. Morton of Estherville, deputy councilor of Emmet county.

### Floyd County

The Floyd County Medical Society entertained two guest speakers from Winneshiek County for its meeting held in Charles City, Tuesday, January 22. F. A. Hennessy, M.D., of Calmar, spoke on Cancer in Iowa; and A. F. Fritchen, M.D., of Decorah, presented a paper on A Short Method for Figuring Percentage for Milk Formulas.

### Greene County

Wednesday, January 9, the following program was given before the Greene County Medical Society at

Jefferson: The Tuberculin Test in Children, R. E. Parry, M.D., of Scranton; discussed by F. P. Cartwright, M.D., of Grand Junction; and Childhood Type of Tuberculosis, L. C. Hanson, M.D., of Jefferson; discussed by O. C. Lohr, M.D., of Churdan.

#### Grundy County Annual Meeting

Dr. M. H. Thielen of Grundy Center, was re-elected president of the Grundy County Medical Society, at a meeting held in Grundy Center, Thursday, January 17. Other officers are: Dr. R. T. Spain of Conrad, secretary and treasurer; Dr. Henry L. Mol of Grundy Center, delegate; and Dr. H. V. Kahler of Reinbeck, alternate delegate.

#### Hardin County

Clement A. Sones, M.D., of Des Moines, addressed the Hardin County Medical Society, Wednesday, January 23, on the subject of Colitis.

#### Jefferson County Annual Meeting

Recently elected officers for the Jefferson County Medical Society are: Dr. J. Fred Clarke of Fairfield, president; Dr. Roy A. McGuire of Fairfield, vice president; Dr. Kenneth G. Cook of Fairfield, secretary and treasurer; Dr. H. E. Graber of Fairfield, delegate; and Dr. G. L. Prentice of Packwood, alternate delegate.

#### Johnson County

At the regular monthly meeting of the Johnson County Medical Society, held Wednesday, January 2, at Iowa City, the retiring president, Dr. Matt Ware of West Branch, presented his successor, Dr. Philip C. Jeans of Iowa City, with a gavel made of black walnut taken from the John Brown house of West Branch. Dr. Ware also presented a similar gavel to his predecessor in office, Dr. J. T. McClintock of Iowa City. The speaker of the evening was E. D. Plass, M.D., of Iowa City, who addressed the group on the subject of Birth Control. Dr. Plass' remarks were enthusiastically received.

H. M. Korn, M.D., Secretary.

#### Linn County

Thursday, January 10, members of the Linn County Medical Society met in regular session at the Montrose Hotel in Cedar Rapids. William H. Olmsted, M.D., head of the metabolism department, Barnes Hospital, Washington University, St. Louis, spoke on The Vascular Diseases of the Extremities; and Louis G. Herrmann, M.D., associate professor of surgery, Cincinnati University, Ohio, addressed the group on The Pa-Va-Ex (Passive Vascular Exercise) Method of Treating Obliterative Arterial Diseases of the Extremities. These two papers were discussed by Drs. B. F. Wolverton of Cedar Rapids, H. M. Korn of Iowa City, and A. A. Johnson of Council Bluffs. A ten minute paper was read by Benjamin G. Broghammer, M.D., of Cedar Rapids, on Skeletal Traction.

The next program of the Society will be held Thursday, February 14, at which time Arthur F. Bratrud, M.D., associate professor of surgery, University of Minnesota, will discuss The Ambulatory Treatment of Hernia; and Guy Van Alstyne, M.D., of Chicago, will present an illustrated lecture on The Diagnosis of Hypertrophic Pyloric Stenosis, with History, Preoperative Preparation, the Operation, Postoperative Management and Weight Curve.

#### Marshall County

Professor Kirk H. Porter, of the department of political science at the State University of Iowa, was the guest speaker for the Marshall County Medical Society, at a dinner meeting held in Marshalltown, Thursday, January 10. Professor Porter's subject was Public Relief and the Private Physician.

#### Osceola County Annual Meeting

The following officers were elected by the Osceola County Medical Society at a meeting held in Sibley, Monday, January 7: Dr. Frank S. Hough of Sibley, president; Dr. L. H. Heetland of Sibley, vice president; Dr. F. P. Winkler of Sibley, secretary and treasurer; Dr. E. P. Farnum of Sibley, delegate; and Dr. Frank Reinsch of Ashton, alternate delegate.

#### Polk County Annual Meeting

Dr. George A. May was inducted as president of the Des Moines Academy of Medicine and Polk County Medical Society, at the meeting held in Des Moines, Tuesday, January 29. At the annual election, Dr. Clifford W. Losh was named president elect for the organization. Other officers are: Dr. N. Boyd Anderson, secretary and treasurer; Dr. James E. Dyson, trustee for a five year term; and Dr. Lee Forrest Hill, councilor for a three year term. Delegates for two year terms are Drs. Walter E. Baker, James A. Downing, Fred Moore and William E. Sanders; alternates are Drs. Harry A. Collins, C. W. Losh, John Russell and John B. Synhorst.

#### Pottawattamie County

The Pottawattamie County Medical Society met in regular session Thursday, January 24, at the Mercy Hospital in Council Bluffs, and the following program was presented by Council Bluffs physicians: The Theory of Conception, illustrated with motion pictures, C. V. Edwards, M.D.; Management of the Influenza Patient in Rural Practice, K. L. Thompson, M.D.; and Common Dermatoses, G. R. McCutchan, M.D.

Arnold L. Jensen, M.D., Secretary.

#### Scott County

G. P. Gatewood, M.D., associate clinical professor of surgery, Rush Medical College, Chicago, spoke before members of the Scott County Medical Society, at a meeting held in Davenport, Tuesday, January 8, on Cancer of the Stomach.



### Sioux County

Three Sioux City physicians were guest speakers at a meeting of the Sioux County Medical Society held in Hawarden, Thursday, January 31. The essayists and their subjects were: Neonatal Conditions, R. H. McBride, M.D.; Birth Injuries, R. E. Crowder, M.D.; and The Basic Science Law, J. E. Reeder, M.D. All members present discussed the last paper at great length, and were urged to communicate with our senators and representatives in an effort to facilitate passage of the bill.

F. C. Bendixen, M.D., Secretary.

### Taylor County Annual Meeting

Officers elected at the annual meeting of the Taylor County Medical Society, held in Bedford, Wednesday, January 23, include: Dr. B. H. Miller of Blockton, president; Dr. Roe B. Reed of Clearfield, vice president; and Dr. John F. Hardin of Bedford, secretary and treasurer.

### Union County

Physicians from Council Bluffs furnished the scientific program for the meeting of the Union County Medical Society held in Creston, Tuesday, January 22. Gerald V. Caughlan, M.D., spoke on The Management of Prostatic Obstruction; Raymond M. Rice, M.D., read a paper on The Education of the Diabetic Patient; and C. A. Hill, M.D., discussed the subject of Hysterosalpingography.

### Webster County Annual Meeting

The Webster County Medical Society held a meeting at the Lutheran Hospital in Fort Dodge, Tuesday, January 29. One of the important subjects discussed was the 1935 contract with the Webster County Board of Supervisors for the care of the poor in this county for the coming year. This contract was agreeable and accepted by the Society. Officers elected at the business session are: Dr. John C. Shrader, president; Dr. J. F. Studebaker, vice president; Dr. W. R. Turner, secretary and treasurer; Dr. Roland Stahr, delegate; and Dr. J. H. Bruce, alternate delegate.

W. R. Turner, M.D., Secretary.

### Woodbury County Annual Meeting

The annual meeting of the Woodbury County Medical Society was held Tuesday, January 29, at the West Hotel in Sioux City. The following officers were elected for 1935: Dr. R. H. McBride, president; Dr. H. S. Gillespie, vice president; Dr. R. N. Larimer, secretary and treasurer; Dr. L. R. Tripp, delegate; and Dr. G. W. Koch, alternate delegate. The following scientific program was furnished by members of the medical staff of South Dakota University, Vermillion, South Dakota; Introductory Remarks, J. C. Ohlmacher, M.D.; A Rational Approach to Diabetic Problems on the Basis of Laboratory Findings, Edwin Shaw, Ph.D.

L. E. Pierson, M.D., Secretary.

### Iowa and Illinois Central District Medical Association

The regular quarterly dinner and meeting of the Iowa and Illinois Central District Medical Association was held at the Blackhawk Hotel in Davenport, Friday, January 11, with one hundred and twenty-five physicians in attendance. The president, Dr. John C. Souders of Rock Island, delivered a testimonial address on Dr. George L. Eyster, who practiced medicine in this community for fifty-five years, and who now resides in Coral Gables, Florida. Resolutions were passed on the death of Dr. Peter A. Bendixen, a past president of the society.

The scientific program consisted of: Some Considerations in the Treatment of the Hypertrophied Prostate, M. M. Benfer, M.D., of Davenport; The Vascular Diseases of the Extremities, William H. Olmsted, M.D., head of the metabolism department, Barnes Hospital, Washington University, St. Louis; and Recent Advances in the Treatment of Obliterative Arterial Diseases of the Extremities, Louis G. Herrmann, associate professor of surgery, Cincinnati University, Cincinnati, Ohio. Horace M. Korn, M.D., of Iowa City, opened the discussion on the above papers. Several patients with arterial disease of the extremities were brought to the meeting, and were demonstrated by Drs. Olmsted and Herrmann.

James Dunn, M.D., Secretary.

### INTERESTING NEWS In Brief

The morphine derivative, dihydrosesoxymorphine-D, discovered at the University of Virginia has been patented and will be manufactured under government license.

Promising results have been obtained in Boston for the correction of sterility by the use of a glandular preparation designed to make up for hormone deficiency.

Experimenters in the Johns Hopkins Medical School, Baltimore, have devised a successful method for transplanting grafts of thyroid and parathyroid gland tissues in human patients.

Dr. E. C. Kendall of the Mayo Foundation, who discovered and isolated thyroxin, has recently announced the chemical formula for cortin, the essential hormone of the adrenal gland cortex.

The incidence of skin cancer among textile workers may be reduced by a recent discovery from England indicating that the cancer producing property of mineral oil is closely related to the oil's refractivity.

Under the educational plan now in use in the United States of Soviet Russia seventy-five per cent of the medical students are educated to become general practitioners. Students to become specialists are chosen by competitive examination.

Most significant, perhaps, of the newer observations concerning the pancreatic enzymes is that made by the Rockefeller Institute Laboratories of a new and potent protein-digesting enzyme chymotrypsin and a new protein chymotrypsinogen.

At the recent meeting of the American Hospital Association Dr. C. H. Sprague, of the Broadlawns Polk County Public Hospitals, opened a discussion on the contributing factors in tuberculosis. Dr. Sprague reported that tuberculosis had decreased unexpectedly during the recent period of economic depression. Apparently the cause for this reduction in the tuberculosis rate has not been determined.

#### PERSONAL MENTION

Dr. Arthur Steindler of Iowa City, spoke on "Subdeltoid Bursitis," before a meeting of the American Academy of Orthopedic Surgery, held in New York City, January 14 to 18.

Dr. F. D. Jacobs, who has practiced in Kellogg for the past four years, has moved his practice and family to Farmington, Illinois. Dr. I. L. Gould, who formerly practiced in Kellogg, is returning from Fairview, Oklahoma, to renew his practice in Kellogg.

Dr. T. C. Denny of Des Moines, was recently given the Des Moines Tribune's Community Service Award for 1934, for his services to civic and community enterprises over a period of several years.

Dr. E. F. Rambo, after fourteen years practice in Stanhope, is planning to move to Webster City, where he will continue to practice his profession.

Dr. George McCreight of Des Moines, has been named assistant medical director of the Bankers Life Insurance Company, to fill the vacancy created by the death of Dr. Frank A. Will. For the past fourteen years, Dr. McCreight has been practicing in Des Moines, and since 1920, has been connected with the medical department of the Bankers Life Insurance Company.

Drs. B. F. Wolverton and A. W. Erskine of Cedar Rapids, spoke before the Cedar Rapids Men's Forum, Monday, January 7, on "Socialization of Medical Practice."

Dr. R. L. Devereaux, after thirteen years of surgical practice in Sioux City, has moved to Vermillion, South Dakota, where he will be connected with the new hospital, to be opened in March.

New members of the Iowa State Board of Health, appointed by Governor Clyde L. Herring, are: Dr. Nathaniel M. McKitterick of Burlington; Dr. Charles E. Irwin of Cedar Rapids; Dr. W. E. Walsh of Hawkeye; Dr. E. M. Myers of Boone; and Dr. Herbert E. Stroy of Osceola.

#### DR. ROHLF'S BIRTHDAY CLINIC

The twenty-fourth annual birthday clinic, marking Dr. W. A. Rohlf's sixty-eighth birthday, was held in Waverly, Saturday, January 5. A surgical clinic was held in the morning, with Drs. E. von Graff of Des Moines, J. R. Buchbinder of Chicago, and Dr. Rohlf, participating. Dr. J. F. Auner of Des Moines conducted a skin clinic in the afternoon, and the following scientific program was presented: Non-malignant Vaginal Infections, E. D. Plass, M.D., of Iowa City; Hematuria, Nathaniel G. Alcock, M.D., of Iowa City; Management of Peritonitis, J. R. Buchbinder, M.D., of Chicago; The Physiology of the Adrenal Gland, A. M. Snell, M.D., of Rochester; and Hernia Operation, V. S. Counseller, M.D., of Rochester, Minnesota. Dr. Leonard A. West of Des Moines, presided as toastmaster over the birthday dinner, which was followed by brief remarks by Drs. Harkness of Davenport, Parker of Des Moines, and Smith of Granger.

#### DEATH NOTICES

Byers, Henry V., of Newton, aged eighty-six, died January 5, of heart disease. He was graduated in 1875 from the Eclectic Medical College, Cincinnati, and at the time of his death was a life member of the Jasper County and Iowa State Medical Societies.

Liesman, Bismark, of Kellogg, aged sixty-eight, died January 18, after an illness of several months from angina pectoris. He was graduated in 1890 from Rush Medical College, Chicago, and at the time of his death was a member of the Jasper County Medical Society.

Peppers, John Lewis, of Webster City, aged sixty-four, died January 20, following a heart attack. He was graduated in 1902 from Keokuk Medical College, College of Physicians and Surgeons, and at the time of his death was a member of the Hamilton County Medical Society.

Smith, Alton LeRoy, of Woodward, aged twenty-nine, died January 21, as the result of a streptococcal throat infection. He was graduated in 1931 from the State University of Iowa, College of Medicine, and at the time of his death was a member of the Boone County Medical Society.

Wallace, Charles Melvin, of Winterset, aged sixty-four, died suddenly January 11, after a heart attack. He was graduated in 1908 from Ensworth Medical College, St. Joseph, and at the time of his death was a member of the Madison County Medical Society.

Will, Frank Arthur, of Des Moines, aged forty-eight, died January 21, of a heart condition. He was graduated in 1909 from the State University of Iowa, College of Medicine, and at the time of his death was a member of the Polk County Medical Society.



# HISTORY OF MEDICINE IN IOWA

*Edited by the Historical Committee*

\*DR. HENRY B. YOUNG, Burlington  
DR. FRANK M. FULLER, Keokuk  
DR. JOHN T. MCCLINTOCK, Iowa City

\* Deceased

DR. TOM. B. THROCKMORTON, Des Moines  
DR. WALTER L. BIERRING, Des Moines  
DR. WILLIAM JEPSON, Sioux City

## A History of Medicine in Jefferson County, Iowa

JAMES FREDERIC CLARKE, M.D., F.A.C.S., Fairfield

(Continued from last month)

### THE MAKING OF A DOCTOR

It was the custom eighty years ago, in Jefferson County, for one who wished to become a doctor to "read medicine" for a time in the office of some established physician and then to attend a course of lectures in one of the medical schools. After a few years of practice many of the Jefferson County doctors returned to the schools for a second course of lectures, thus holding degrees from two medical schools even though one degree was not required. He who so wished could practice medicine and some of the best loved doctors had a very meager education. Is it possible that some of us today, leaning too heavily on our scientific equipment, have lost the kindly touch and sympathetic manner that made our predecessors so much esteemed by their patients?

The making of a doctor about 1850 is an interesting procedure in contrast with that of today. Daniel Ream<sup>155</sup>, a boy, came to Jefferson County with his father, Dr. Henry Ream<sup>154</sup>, in 1846. He began the study of medicine with his father in Abingdon, when sixteen years of age, while working on the farm. When eighteen years of age he cared for the patients during his father's absences. His first patient was a woman bitten by a rattlesnake. She recovered under Daniel's treatment. Later, in his father's absence, he treated a case of "bilious fever" in a child. On the father's return Daniel urged him to take the patient, but Dr. Henry Ream refused to interfere, approving his son's treatment. This child with "bilious fever recovered in a few weeks." Daniel, now "Dr. Daniel Ream" in the community, went to the Eclectic Medical Institute in Cincinnati, Ohio, and attended a course of lectures in the winter of 1851-52. After he was graduated in

medicine he went to California in the "gold rush" of 1852. He went in a caravan of ten wagons of which he drove one. He settled in Yreka in Siskiyou County where he died in 1907, "the best loved citizen in that county, a most distinguished physician." Dr. Daniel Ream's education was certainly inexpensive either in time or money.

A second example of the making of a doctor of which we have more detailed information, is in the life of Joshua Monroe Shaffer. He was graduated from Washington College in Pennsylvania when eighteen years of age, and at nineteen began the study of medicine in the office of his brother, Dr. John E. Shaffer. Joshua had a fine preliminary education. He read and wrote Latin, French, and German. He was a diligent student.

Joshua Monroe Shaffer began his studies with Watson's practice. Of this he says: "Watson's style is exceedingly fine and captivates the reader." Next he read "Hamilton on Purgatives" (this must have been an important book in those days). He planted *ricinus* and *momordica balsamina* in his preceptor's garden; "the former much used as an active cathartic, the latter is not officinal but the ripe fruit mashed with lard makes an excellent ointment for chapped hands and when mascerated in proof spirit is used as a styptic on fresh wounds and cuts."

Another day he writes in his diary: "I cleaned the doctor's horses and made his pills. The doctor cut my hair. I mended my pantaloons and saved a quarter," and later, "I cupped Mrs. Bryan in the left hepatic region." Another day in June he notes: "I made a couple of hundred of Dr. Chapman's dinner pills and commenced the second volume of anatomy." Joshua kept an accurate account of the number of pages of medical books

that he read daily and it was a considerable number.

Through his daily notes one can see this young man of nineteen years working for his brother, the doctor, saving his money, reading diligently in English, Latin, German and French, and preparing himself well to follow Dr. Moberly into Jefferson County, Iowa, when he was twenty-two years of age. He attended church and prayer meeting regularly, taught a Sunday School class, played the fife in the local band and played for military drills. In July, 1850, he exclaims: "I have gone through the medical course. How little do I know of it? No man in one year or one century can acquire half the knowledge that belongs to the science of medicine." With how much more appreciation of their truth can we today repeat these words?

One day this Shaffer boy "made Dover's powder and compounded tincture of cinnamon" for his brother and then remarks: "Pharmacy is the prettiest business in the world." Though the July temperature was 94 degrees he "studied all day," reading the second volume of anatomy in six days.

After completing a full year of "reading medicine" Joshua Monroe Shaffer attended a course of lectures at the University of Pennsylvania School of Medicine in Philadelphia. For those days, then, he was very fully equipped when he came to Iowa.

One incident of Dr. Shaffer's student days in Pennsylvania is so revealing of the enlightened practice of 1850 that we wish to relate it in his words: On July 30 a Dr. Stewart was "unwell in the forenoon, attacked with vomiting and purging, but he came to town from 11:00 to 2:00 o'clock shopping. At 3 o'clock he called two doctors and they pronounced his disease cholera. Consultants were called from the city who approved the treatment of the local doctors and urged a continuance." Nothing would lie on his stomach and poor Dr. Stewart died at 9:00 p. m. What was the "approved" treatment? It was brandy and "spreads of 300 grains of calomel in four hours." Monroe Shaffer then comments: "It is a terrible reflection that a healthy vigorous man should be attacked with disease and in less than twelve hours fall a victim to its power. In the midst of life we are in death." We comment: a dose of three hundred grains of calomel even though "spread" over four hours seems to us appalling. The idea of giving that dose to a patient with cholera today is incomprehensible, but it was approved by the best doctors of that time.

For the first fifteen years of our medical century we have no details of the diagnosis, the treatment or the mortality from disease in Jefferson County.

In 1853 Dr. Charles S. Clarke came over into Jefferson County in consultation. The patient had been ill three weeks and it was determined that he could not live. Dr. Clarke confided to Mrs. Corbin that the attending physician "had not done enough in the first place. He was attacked very violently and ought to have been reduced, at the first, very low by bleeding and physic." Then Mrs. Corbin says in her letter: "he is much reduced in flesh but has great strength. He could stand on his feet and step with the help of a chair. He was up in a chair one hour before he died."

Probably this was typhoid fever and the patient was "up in a chair often." Mrs. Corbin's letter reveals the then prevalent idea: fever was a disease entity and must be fought by bleeding and physic. In our reading of an earlier time we are amazed at the widespread practice of witchcraft. To many of us this later idea of "reducing" and "salivating" patients is as hard to understand. This was the teaching in the best medical schools of the day.

#### MIDWIVES

In the early decades of Jefferson County history an important rôle was played by midwives. In the earlier years doctors were not always available for obstetric cases, but even after the Civil War women midwives were trusted and successful. Of these midwives of Jefferson County, Mrs. Rachel C. Pierce, who was born in 1809, and who practiced her profession in Fairfield from 1850 until long after the Civil War, was the most distinguished. She had a set of instruments in a carpet bag and some fine books in her library. She attended during these years 1,000 confinement cases with not a single death. She accomplished version deliveries successfully many times. In one family she attended the mother during the birth of eight children. Mrs. Pierce always wore a "slat" sunbonnet and a plaid shawl on her professional visits. "When we children," writes one of the older daughters, "saw these garments in the hall, we knew there would be a new baby in the family." Mrs. Pierce charged two dollars in gold for her services and these two thousand dollars were for long buried in the cellar of her home. That she had been paid so many dollars speaks well for the class of patients she attended. Few doctors then or since have had such a successful record as had "Aunt Rachel Pierce," who died in 1890. Her experience is well authenticated. She was an educated student of obstetrics.

In her day doctors in general practice attended cases of infectious fevers. At that time in Jefferson County no one knew of germs and disease



transmission. Probably the chances for life for the pregnant women were better if they were delivered by clean women who attended none but obstetric cases, than by the average doctor of the day. Such was the truth discovered by Semmelweis in his hospital at Vienna in 1845, a truth, like many, disregarded by our profession for thirty years.

The doctors, in those days, had contempt for the midwives, and probably many women who practiced midwifery were ignorant. Dr. Shaffer in his journal mentions a puerperal case in 1855: "Mrs. S— (attended by Mrs. Kultner, midwife) gave birth to a small child. The midwife made her sit on her husband's knees—a most dangerous and absurd practice. She took no medicine till the fifth day. This was remarkable." The doctor then took charge, gave the patient medicine and carried Mrs. S. through a stormy convalescence to recovery. His final remark is: "The midwife said 'pains were all in the bowels and due to my medicine.'" In this case, as in all others then recorded, there was no clinical thermometer, and we cannot judge its severity.

Dr. Joshua Monroe Shaffer arrived in Fairfield May 9, 1852. Three days later he rode to the country to see a case of "dropsy," but the family of the patient refused his aid. They decided to try some pills "made from a recipe from Nantuck that were never known to fail." The pills did however fail in this case. The dropsical woman died two days later. In those days symptoms were diseases and no one sought for basic causes.

Thus began the busy life of this new doctor in Jefferson County whose education was more elaborate and more costly in time and money than that of Dr. Daniel Ream. Dr. Shaffer kept a daily record of his work and from this record we are able to get a picture of the practice of medicine in 1852. He formed a partnership with the well established Dr. John T. Huey<sup>86</sup>. Dr. Shaffer was to receive one-fourth of the income. We begin to read the doctor's notes of June, 1852. He had a girl patient who had inherited "the scrofulous diathesis." She had "coxalgia," and had been treated by Dr. G. for rheumatism. Dr. Shaffer put on a splint and gave mercury and chalk, "mercury to purge" and "morphine for rest." Again and again through the years this treatment occurs for many conditions. Next we see the doctor with a boy who has varicocele. Drs. M. and P. had put on a spring truss which Dr. Shaffer discarded and prescribed "saturnine lotions," certainly a more rational treatment. Perhaps one day's notes from the doctor's diary will give us the best picture to contrast with our work today. He had no germ theory to help in making a mental

picture of the case; he had only his five senses with which to work out a diagnosis. Saturday, August 14, 1852, "Got up at 4:00 o'clock and went to market, then fixed up things about the office and attended to the horses. Moore came in and told me Sam was worse. Went out through the rain and got there at 7:00 o'clock, found Sam much prostrated, bowels irritable, discharges frequent, bloody, bilious, mixed in character, pulse 130, weak, compressible, perfectly regular. Surface irregularly heated, abdomen very hot, clear sound on percussion, no tympanitic distension, breast and hands moist with perspiration, foci in certain parts of the body cold, yet he complained of being hot. Gave a teaspoonful of brandy and one of emulsion of spirits of turpentine containing about ten drops of oil, alternately every hour. Also a large blister on the abdomen.

5:00 o'clock. Went out and found all symptoms improved. Discharges continuing, gave an injection of six grains of sulphate of zinc. This kept the bowels for more than two hours. Went out on foot just before 11:00 o'clock tonight. Patient soporose, pulse 130, extremities cold, tongue coated deeply with brownish black fur, tip and edges red, gave Tr. opii and brandy alternating with emulsion of turpentine with the effect of equalizing the circulation of cutaneous surface and reducing the pulse to 110, fuller and better. About 12:00 o'clock there was considerable jactitation and restlessness; patient thinks himself away from home. At 1/2 o'clock a. m. had a motion of the bowels, small, fetid, reddish brown, unmixed, then had no motion for three hours. Borborygmi frequent, quite audible at a distance from the bed. 3:00 o'clock, violent screaming with desire to go home, evacuation in bed, got easy. I left at 4:00 o'clock he being better, of course I got no sleep that night."

Such details from 1852 are interesting to the doctor of today. The struggle without diagnostic instruments; without bacterial knowledge; the description of hot and cold parts of the body; the minute description of the tongue and the stools, all proved ineffectual in forming a true mental picture of the disease. Sam died the next Monday. More died in those old days before "Homeopathic King" and others of his school taught the doctors that the tenth potency of nothing given in cold water allowed Nature to build an immunity faster than did turpentine emulsions and calomel. Typhoid fever, typhus fever, malaria, dysenteries, enteric fevers, were confused and indifferentiated. Undreamed of were temperature charts and blood examinations, mosquito bites and fly screens, cold baths and fresh air and water in their relations to these fevers. This picture of the night and day

labor of one of the best educated doctors of his day brings forcibly to realization the progress of our century.

Very often in his practice, Dr. Shaffer prescribed calomel and Dover's powder "with the view of establishing the peculiar impression of mercury on the system." The opinion seemed to prevail that salivation should be produced as rapidly as possible. In one case there was a consultation and Dr. Huey was of the opinion that this patient had an idiosyncrasy preventing her from taking a large dose of calomel, so the final decision was to give her *only* ten grains. Opium was given "to quiet pain and produce stasis in circulation with calomel to rouse the secretions."

This young, highly educated doctor, who came to Jefferson County in 1852, had a lancet in his pocket, but he had no clinical thermometer, no hypodermic syringe and no stethoscope. He probably had no microscope and of course had no means of counting blood cells or of taking blood pressure or of making x-ray pictures. How could one practice medicine without these helps to make a diagnosis? Dr. W. W. Keen of Philadelphia says that Dr. S. Weir Mitchell brought to him from London in 1876 the first self-registering clinical thermometer that he had ever seen. Dr. O. A. Geeseka of Mt. Pleasant, Iowa, tells me that in 1878 he had a clinical thermometer although it was not self registering. Dr. Geeseka's thermometer was six inches long with an elbow and had attached a long rectangular plate on which the scale of degrees was placed. The self registering thermometer was invented by Dr. Clifford Allbut in 1868. It must have been 1880 or later, before the first one was used in Jefferson County. We cannot learn who first used this instrument of precision in this county.

It is also uncertain when the hypodermic syringe was first used in Jefferson County. It was invented by Prevez in 1852 and used by Fordyce Barker in the United States in 1856. Dr. S. K. Davis<sup>45</sup> of Libertyville, Iowa, had a hypodermic syringe in 1888 but no tablets. He had to weigh out two grains of morphine (the best his scales would do) and divide this in eight parts with his knife. Dr. Geeseka used the hypodermic syringe first in 1878. Dr. Keen thinks that there were "not half a dozen hypodermic syringes in the army of the Potomac in 1865. Probably it was 1880 before many doctors in this county made use of hypodermics. The writer in 1890 found a hypodermic injection much dreaded by his patients, and a hypodermic at that time meant morphine to the laity.

(To be continued)

## RESOLUTIONS

*Whereas*, by death we have lost a noble pioneer physician and a fine friend, Dr. W. R. Smythe, we bow in regret and sorrow to an all wise providence in calling him to the life beyond, after a long time of service to his fellowmen in our county. It may be truly said, that Dr. Smythe was a typical pioneer family physician. His years of service bear fluent testimony from his patients and friends, as to his loyalty and sacrifice in service among them. He had a pleasing and kind disposition, that cheered and comforted all who came in contact with him.

*Therefore, be it resolved*, that the Louisa County Medical Society has lost one of its charter members, and a loyal friend; his family, a kind and gracious supporter; the community, a real friend and counselor, who always responded to every noble cause that needed support and encouragement.

*Be it further resolved*, that a copy of these resolutions be sent to the family; that these resolutions be spread upon the records of our society and a copy be sent to the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY.

Respectfully submitted,

Dr. W. B. Brock,  
Dr. F. A. Hubbard,  
Dr. E. R. King,  
Committee.

## MAYO FOUNDATION LECTURES

A special program of lectures and demonstrations in medicine will be held under the direction of The Mayo Foundation from March 4 to 8, inclusive. Mornings will be devoted to surgical and medical clinics. In the afternoons and evenings symposia will be conducted on urology, acute abdominal conditions, pediatrics, gastro-enterology, the thyroid and parathyroid glands, and dermatology. In addition two clinicopathologic conferences will be held. On Friday evening, March 8, the Minnesota Trudeau Society will hold an open meeting. While these programs are arranged primarily for the fellows of the Foundation, visiting physicians are invited to attend.

## CONGRESS ON INDUSTRIAL ACCIDENTS AND DISEASES

The Seventh International Congress on Industrial Accidents and Diseases will be held at Brussels, Belgium, from July 22 to 27, 1935. The American Committee of the Congress is under the chairmanship of Dr. Fred H. Albee, New York, for the section on accidents and that of Dr. Emory R. Hayhurst, Columbus, Ohio, for the section on industrial diseases. The American delegation to the Congress will sail from New York on August 8, and visit London, Amsterdam, The Hague and Paris and, optionally Budapest. Physicians interested in the Congress or in the medical tour in conjunction with it may address the Secretary, Dr. Richard Kovacs, 1100 Park Avenue, New York.



# THE JOURNAL BOOK SHELF

## BOOKS RECEIVED

**SYSTEM OF DIET WRITING**—By William S. Collens, M.D., chief of diabetic clinic, Israel Zion Hospital, Brooklyn, New York. Form Publishing Company, 200 Hudson Street, New York City, 1934. Price, \$5.00.

**THE HEART VISIBLE**—A Clinical Study in Cardiovascular Roentgenology in Health and Disease. By J. Polevski, M.D., attending physician and cardiologist, Newark Beth Israel Hospital, Newark, New Jersey. F. A. Davis Company, Philadelphia, 1934. Price, \$5.00.

**INSTITUTIONAL CARE OF MENTAL PATIENTS IN THE UNITED STATES**—By John Maurice Grimes, M.D., four years a staff member of the Council on Medical Education and Hospitals of the American Medical Association. Published and distributed by the author, 1816 North Clark Street, Chicago, Illinois, 1934. Price, \$3.00.

**INTERNATIONAL CLINICS**—Volume IV, Forty-fourth Series. Edited by Louis Hamman, M.D., visiting physician, Johns Hopkins Hospital. J. B. Lippincott Company, Philadelphia and London, 1934. Price, \$3.00.

**MANUAL OF CLINICAL LABORATORY METHODS**—By Pauline S. Dimmitt, Ph.G., medical technologist, Stout Clinic, Sherman, Texas. Illustrated with 36 engravings, including seven full page colored plates. F. A. Davis Company, Philadelphia, 1934. Price, \$2.00.

**MINOR SURGERY IN GENERAL PRACTICE**—By W. Travis Gibbs, M.D., consulting surgeon, City Hospital and Central and Neurological Hospitals, New York. 417 pages with 148 illustrations. Paul B. Hoeber, Inc., New York, 1934. Price, \$5.00.

**A TEXTBOOK OF GYNECOLOGY**—By Arthur Hale Curtis, M.D., professor and head of the department of obstetrics and gynecology, Northwestern University Medical School. Second edition, reset; 493 pages with 300 original illustrations. W. B. Saunders Company, Philadelphia and London, 1934. Price, \$6.00.

**A TEXTBOOK OF HISTOLOGY**—Functional Significance of Cells and Intercellular substances. By E. V. Cowdry, professor of cytology, School of Medicine, Washington University. Illustrated. Lea & Febiger, Philadelphia, 1934. Price, \$5.50.

**TUBERCULOSIS IN THE CHILD AND THE ADULT**—A discussion of pathologic anatomy, physiology, immunology, diagnosis and treatment. By Francis M. Pottenger, M.D., clinical professor of medicine, University of Southern California School of Medicine. Illustrated. C. V. Mosby Company, St. Louis, 1934. Price, \$8.50.

**THE YEAR BOOK OF GENERAL MEDICINE, 1934.** Edited by George F. Dick, M.D., Lawrason Brown, M.D., George R. Minot, M.D., William B. Castle, M.D., William D. Stroud, M.D., and George B. Eusterman, M.D. The Year Book Publishers, Inc., Chicago, 1934. Price, \$3.00.

## BOOK REVIEWS

### MINOR SURGERY IN GENERAL PRACTICE

By W. Travis Gibbs, M.D., consulting surgeon, City Hospital and Central and Neurological Hospitals, New York. 417 pages with 148 illustrations. Paul B. Hoeber, Inc., New York, 1934. Price, \$5.00.

The question of what constitutes major and what constitutes minor surgery will perhaps never be settled, inasmuch as the two are indivisible. Operations which under one condition may be considered as minor, under other conditions become definitely major procedures.

A book covering the subject of minor surgery necessarily errs both in exclusions and inclusions. The author of this volume appears to have struck a rather happy medium, although it would seem that if his work were to be criticized the criticism would be that of including too much, rather than too little. Devised on the plan of other volumes designated to meet the same needs, the author includes those procedures which may ordinarily be performed by the physician or surgeon in his own office or in the home of the patient, excluding from discussion those cases where hospital facilities are definitely required.

The volume will be found especially useful by the new graduates whose experience may not have covered many of the conditions described. In our opinion the volume would be more universally useful if presented in paragraphic form with a cross index, and if it contained better and more numerous illustrations.

### SYSTEM OF DIET WRITING

By William S. Collens, M.D., Chief of Diabetic Clinic, Israel Zion Hospital, Brooklyn, New York. Form Publishing Company, 200 Hudson Street, New York City, 1934. Price, \$5.00.

Prepared upon essentially unique lines this entirely new system of diet writing will immediately appeal to the busy practitioner. Presented in the form of a loose leaf notebook the system comprises a diet calculator, an obesity chart, and a diet formulary. One hundred menu prescription forms are included.

The essential information concerning the exact type of diet required in a particular case can be obtained by reference to the proper card in the system. Here the information is tabulated in the briefest possible space and elsewhere full details concerning any particular item may be obtained.

The charts will be found useful alike by the experienced and the unexperienced dietician. Those more experienced in this branch will appreciate the condensation of the necessary dietetic knowledge, while the inexperienced may with proper study readily calculate any form of diet required.

The slide rule method of obtaining a particular diet where the total calories and the carbohydrate, fat and protein ingredients are predetermined is of especial interest. These charts reduce diet calculations from a major to a minor procedure. The theory of dietetics is necessarily omitted in so condensed a work but this system in its practical application is one of the most valuable of any which has come to our attention.

## AMERICAN ENCYCLOPEDIA OF SEX

By Adolph F. Niemoeller, The Panurge Press, New York, 1934. Price \$5.00.

To our knowledge this is the only book covering this field in English. It has been written by a special advisor on sexual anthropology to the American Anthropological Society which assures its authenticity. The volume contains a full lexicon of the technical words of sexology and erotology, a vocabulary of sex slang and Americanisms, technical expressions used in medico-sexo-legal work, a glossary of foreign sex terms, and a compilation of sexual allusions in history and literature.

To the occasional student in this branch of medicine this volume is a necessity, since the unexperienced reader encounters difficulties in a technical discussion of sexology without such a guide. In medico-legal practice exact definitions, such as those given in this work, are absolutely essential.

Since general interest among the laity is aroused concerning these studies, there will be an especial demand for a work of this sort among this class.

## MEDICINE MAN IN CHINA

By A. Gervais. Translated from the French by Vincent Sheean. Frederick A. Stokes Company, New York, 1934. Price, \$2.75.

Many books are picked up with the idea of getting something instructive read, perhaps with the reluctant feeling of fulfilling an obligation due the mind. "Medicine Man in China" surprises such a reader because he finds himself so fascinated that reading it becomes a pleasure not easily postponed.

A pair of young French doctors, starched with Western efficiency and modernity bump into the stupid stolidity of the Oriental from the time of their landing in Shanghai and fret along with it on their journey deep into darkest China. There in Chengtu they were commissioned to the medical school, where their service is a panorama of amusing clashes with the traditions, customs, taboos and backwardness of the Chinese. Gradually they begin to fathom the depths of the Chinese mind, to diagnose the elemental differences that make the Orient so unaccountable. After a few crowded years they flee, before the smiling, tranquil fatalism of China impregnates its strange sweetness too indelibly upon their lives.

The physician will find particularly interesting the incidents of the hospital routine, the handling of a severe cholera epidemic, and the attempts to preserve the health of a crowded native city in siege. He will chuckle at the difficulties encountered by the doctors in overcoming age old prejudices relative to child-birth and autopsy.

The translator has preserved the flavor and richness of the French idiom without marring the crisply attractive literary style in the translation. "Medicine Man in China" will be heartily enjoyed by those who have no especial interest in medicine or travel, as well as by those in the profession. Your copy will know many lendings and rereadings.

## SURGICAL CLINICS OF NORTH AMERICA

Volume xiv, No. 4, Chicago Number, August, 1934. Octavo of 288 pages with 88 illustrations. W. B. Saunders Company, Philadelphia and London, 1934. Price, paper, \$12.00; cloth, \$16.00.

This number contains some very excellent articles. A symposium on plastic surgery is especially interesting, composed of articles on the use of elastic traction; pedicle flaps to close an opening in the hard palate; burn contractions of the axilla, reconstructions of fingers, transplantations of toes, plastic correction of the pendulous breast, plastic repairs of facial defect, and repair of hypospadias.

The surgical treatment of tuberculosis is illustrated by some interesting cases. Another outstanding paper is on surgical procedure of tumors of the parotid gland, with especial reference to the anatomy and means of avoiding facial paralysis.

There is also an excellent symposium on peptic ulcer with discussion of etiologic, anatomic, medicinal, roentgenologic and surgical aspects. F. W. F.

## A TEXTBOOK OF GYNECOLOGY

By Arthur Hale Curtis, M.D., professor and head of the department of obstetrics and gynecology, Northwestern University Medical School. Second edition, reset; 493 pages with 300 original illustrations. W. B. Saunders Company, Philadelphia and London, 1934. Price, \$6.00.

In the first edition of this work, which was published about three and a half years ago, the author successfully endeavored to present the specialty of gynecology in a concise form and in a manner entirely independent of other works of a like nature. Since the publication of the first edition the author has diligently reviewed the literature on this subject and in this, the second edition, he has incorporated such material from outside sources as appeared desirable to round out his discussion of this subject.

The technic in various surgical procedures has been given in greater detail. The first main division of the book is devoted to infectious processes of the female reproductive organs. The second main division deals with tumors of the uterus. The third division discusses displacements and relaxations of the uterus. The last, and largest division of the subject matter, deals with disturbances of function, and includes the gynecologic aspects of pregnancy, radiotherapy, and operative and postoperative management of the patient.

The three hundred original illustrations are particularly noteworthy both from the standpoint of selection of material and from the standpoint of artistry in execution. This text continues to reflect to a very large degree the personal experiences and observations of the author, and, for this reason, presents discussions and viewpoints not found in other texts.



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### BLEEDING PEPTIC ULCER\*

W. M. FOWLER, M.D. and

H. M. HUREVITZ, M.D., Iowa City

The clinical records of 1,046 cases of peptic ulcer were reviewed from the standpoint of frequency and the treatment of gross hemorrhage. The diagnosis of ulcer was established by clinical and laboratory findings, roentgenologic examination and inspection of the lesion at operation or necropsy. Thirty cases were included in which neither direct inspection nor roentgenograms were made, but in which the clinical picture was sufficiently characteristic to justify the diagnosis.

Statistics as to the location of the ulcer and the sex distribution are given in Table I.

Table I—Total Group

Location	Males	Females	Total
Duodenal	718	137	855
Gastric	107	31	138
Combined	6	2	8
Marginal	14	1	15
Unclassified	23	7	30
Total	868	178	1046

Hemorrhage occurred in 257 or 24.5 per cent of the 1,046 cases. This was manifest by hematemesis or melena of such degree that it was noticed by the patient. Those cases in which only occult blood was found in the stool were excluded, since it is probable that such a finding is present at some time in all cases of peptic ulcer. There were 218 males and 39 females in the group that bled, and figures in respect to the location of the ulcer are given in Table II.

Table II—Ulcers with Hemorrhage

Location	Males	Females	Total
Duodenal	160	27	187
Gastric	37	7	44
Marginal	6	1	7
Unclassified	15	4	19
Total	218	39	257

\*From the Department of Internal Medicine, State University of Iowa, Iowa City.

It is to be noted that the males constitute 82.9 per cent of the total, 84.9 per cent of the group that bled, and that 25.1 per cent of the males hemorrhaged. Females made up 17.1 per cent of the total and 15.1 per cent of the group with hemorrhage, and 21.9 per cent of the females bled at some time in the course of their illness. Twenty-one and eight-tenths per cent of the duodenal ulcers, 31.8 per cent of the gastric ulcers, and 46.6 per cent of the gastro-jejunal ulcers had hemorrhaged. These statistics show that men are a little more likely to bleed than women, and that gastric ulcers are noticeably more liable to hemorrhage than are duodenal ulcers.

Of the 257 cases of hemorrhage there were 108 which may be classified as severe, the patients having lost consciousness, been confined to bed, or required active treatment because of the blood loss. There were 81 of moderate severity and 68 were mild, the patients having had a gross hemorrhage but no symptoms referable to the loss of blood *per se*.

There were 126 who had a single episode of bleeding, 46 with two hemorrhages, 23 with three and 62 with a history of repeated loss of blood. Hemorrhage occurred as the first symptom of the ulcer in 31 cases, and in 66 it appeared either as the initial symptom or during the first period of epigastric distress. Of the 72 cases seen in this hospital because of their bleeding, hemorrhage was the first symptom in ten.

The average age of the various groups is interesting, because it shows a gradual rise as the severity of the bleeding increased.

Table III

	Average Age
Entire group	42.2 years
With hemorrhage	45.7 years
Severe, not-fatal hemorrhage	46.9 years
Fatal hemorrhage	52.7 years

Seventy-two patients with a severe blood loss were treated in the University Hospital, the hemorrhage developing immediately preceding the admission, or while the patient was in the hospital.

Seventeen of these patients died and 55 recovered. The latter group will be considered first and the statistics are given in Table IV.

Table IV—55 Cases

Average age, 46.9 years	
Oldest, 74 years	
Youngest, 15 years	
Under 40 years of age, 19 or 35.8 per cent	
Sex—males 50, females 5	
No previous bleeding, 21	
One previous hemorrhage, 11	
Two or more previous hemorrhages, 23	
Location of ulcer:	
Duodenal	35
Gastric	10
Gastro-jejunal	5
Indeterminate	4
Duration of symptoms, 1 week to 33 years	

The epigastric distress in this group did not differ from that of the usual case of peptic ulcer. With the onset of the hemorrhage the distress disappeared in four cases while in certain of the others it became more severe. In all of these cases the routine treatment for bleeding ulcer was employed. This consisted of absolute bed rest, morphine to control restlessness, nothing by mouth for twenty-four to forty-eight hours, and then only small amounts of cracked ice.

Eighteen of the 55 patients that recovered received no transfusions nor intramuscular blood. Hemoglobin readings from 30 to 19 per cent were encountered in this group, and in one instance it was as low as eight per cent. In this particular instance there was a history of a gastro-enterostomy five years previously with a severe hemorrhage occurring soon afterward but no gross blood loss since that time. There had been, however, a constant oozing so that on admission there was only 1.59 gms. of hemoglobin per 100 cc. of blood. He was given ferric ammonium citrate by mouth with a prompt response of the hemoglobin and erythrocytes. Two years later he was working steadily. In twelve of the eighteen cases there was no history of previous blood loss, the hemorrhage had apparently ceased and rapid regeneration of the blood was obtained without transfusion. Even if a severe grade of anemia is present, transfusions are not necessary in many instances and the determining factor in deciding for or against this method of treatment should not be the hemoglobin percentage alone. Many patients with a slow loss of blood will tolerate a severe anemia surprisingly well, whereas those with more rapid bleeding will sink into coma even if the erythrocyte count and hemoglobin percentage of the blood is much higher. A certain degree of danger is present in all

transfusions regardless of the precautions taken, so that it seems best to reserve this procedure for those in whom it is an actual necessity.

Six cases received small amounts of blood, usually 30 cc., either intramuscularly or intravenously, in an attempt to stop the bleeding. What part this procedure played in controlling the hemorrhage is difficult to determine, but in certain instances it seemed of definite value as the hemorrhage ceased abruptly after the administration of the blood. Eleven cases received a single transfusion of from 120 to 500 cc. of blood and in four of these there was blood in the stool specimen at the time of the transfusion. Twenty patients received two or more transfusions and in 13 of these there was melena at the time of the first transfusion. It is usually considered inadvisable to transfuse an ulcer patient who is still bleeding, because of the likelihood of increasing the hemorrhage, but this belief is not substantiated in this group of cases. The hemorrhage seemed to be increased after the transfusion in only three cases and then not to a dangerous degree. The largest amount of blood given to any one patient was 2,160 cc. in four transfusions. Mild reactions occurred after five of the transfusions, one after the initial donation and four after a repeated transfusion.

Seventeen of the 257 cases with hemorrhage died (Table V), although in four of these death was not due to the hemorrhage alone.

Table V—17 Fatal Cases

Mortality in entire group	0.16 per cent
Mortality among those who bled	6.6 per cent
Average age, 52.7 years	
Oldest, 76 years	
Youngest, 25 years	
Under 40 years of age	5 or 29 per cent
Sex, all males	
Duration of symptoms, 3 days to 20 years	
No previous bleeding, 7	
One preceding hemorrhage, 6	
Two or more preceding hemorrhages, 4	
Location of ulcer:	
Duodenal	9
Gastric	6
Gastro-jejunal	1
Indeterminate	1

One patient had a pleural effusion of tuberculous origin and a terminal septicemia. Two patients were found at necropsy to have perforated duodenal ulcers and generalized peritonitis, the symptoms of which had been masked by the severe anemia. The fourth patient developed anuria immediately following a transfusion and died in uremia.

In the remaining thirteen cases death was at-



tributable to the hemorrhage alone. Three of these cases did not receive transfusions but were given small amounts of whole blood (30-50 cc.) intramuscularly or intravenously for its hemostatic action with no appreciable effect. One of the three cases was necropsied and a large vessel was found to be eroded.

One patient died seventy-two hours after a hematemesis which was the initial symptom of his duodenal ulcer. At necropsy a vessel one millimeter in diameter was found eroded in the base of the ulcer. Another patient, moribund at the time of admission, died four and one-half hours later in spite of a large transfusion. Surgery was resorted to in one patient who had had tarry stools continuously for two weeks, and although transfusions were given before and after the pyloric resection they were of no avail.

The remaining seven cases received from one to four transfusions and in five of these it was given while the patient was still hemorrhaging. In most instances these were given as a last resort and with little expectation of beneficial results. In only one instance did the bleeding seem to be increased by the transfusion. When given to a patient in coma, the immediate effect of transfusion was invariably good although usually transient. In one individual, each of four transfusions was given with the onset of coma and although he regained consciousness with each, the bleeding continued. In the four autopsies in this group of seven cases a large eroded vessel was found in two instances and no bleeding point was demonstrable in the others.

Eleven of the seventeen fatal cases were necropsied and in seven of these a large eroded vessel was found in the base of the ulcer. The size of the vessel in each instance was such that no hemostatic agent could be expected to control the bleeding. In the remaining four cases no bleeding point was demonstrable. It is interesting to note that necrosis of the liver cells was found about the central veins in ten of the eleven cases, and in five of these it was rather extensive.

#### COMMENT

Hemorrhage is a common complication of peptic ulcer, and one which not only adversely affects the prognosis of the ulcer, but which is frequently severe enough in itself to require active treatment. No attempt has been made to review thoroughly the literature on the frequency of hemorrhage and only a few of the more important articles in the recent literature will be mentioned. Allen<sup>1</sup>, in a series of 1,017 cases of peptic ulcer found 387 (38 per cent) with a history of macroscopic bleeding and in a second group of 762 outpatient cases there were

52 who had bled. He found that there was a 40 per cent chance of repeated hemorrhages and since the probability of spontaneous cessation of the bleeding diminished with each attack, felt that all were potentially surgical patients. Allen and Benedict<sup>2</sup> later reported on 1,804 cases of peptic ulcer in which 628 (34 per cent) had macroscopic hemorrhages. There were twenty fatalities in this group, eight of which had been subjected to surgery as a last resort to control the bleeding. Lahey<sup>3</sup> found 139 cases of massive hemorrhage among 759 ulcer patients (eighteen per cent). Chiesman<sup>4</sup> reported 191 admissions for gross hemorrhage among 1,812 cases (ten per cent) and Lynch<sup>5</sup>, with 944 cases of ulcer, reported that 293 (thirty-one per cent) had hemorrhaged. Balfour<sup>6</sup> states that twenty-five per cent of patients with peptic ulcer will hemorrhage if followed for a ten-year period. The significance of hemorrhage on the subsequent course of peptic ulcer is shown by Jordan and Kiefer<sup>7</sup> who found that only fifteen per cent of the successfully treated cases had bled, whereas in the unsuccessful group 55 per cent had hemorrhaged. Of the patients who had bled only once, twenty-seven per cent had a recurrence of their ulcer symptoms while 82 per cent of those with repeated hemorrhages had a recurrence of symptoms. Burger and Hartfall<sup>8</sup>, in 2,145 cases of ulcer, found 137 (six per cent) had had severe hematemesis with thirty-one fatalities from the loss of blood. They quote statistics of other writers to show that the mortality of hemorrhage in peptic ulcer ranges from .9 to 6.5 per cent.

There is no agreement as to the proper method of treating this complication. The more conservative method<sup>9</sup> consists of leaving the patient strictly alone with even the weight of an ice bag relieved by suspending it from a frame above the bed. No blood pressure readings are taken because of the possibility of this procedure increasing the pressure and no enemas are given because of the reflex effect on gastric motility.

Gastric lavage has been utilized for many years and was used by Kussmaul as early as 1885. Kaufmann<sup>9</sup> believed that lavage was of great importance since it relieved gastric distention, eliminated irritating products and removed a partially occluding thrombus when this was present in the eroded vessel. He believed that such a thrombus when only partially occluding the vessel was an important factor in many cases of prolonged bleeding. Soper<sup>10</sup> has more recently advised gastric lavage and continuous drainage through a nasal catheter with the administration of thromboplastic substances through the tube. By this means gastric distention is relieved, the gastric acidity continuously controlled and recurrent

bleeding can be detected at once. On the fourth or fifth day the tube is passed into the duodenum and a high caloric liquid diet given by this route. Hurst<sup>11</sup> advises aspiration and gastric lavage with four ounces of ice water or 1 to 1,000 solution of iced ferric chloride followed by the administration of 1 to 1,000 adrenalin chloride solution. He feels that these measures result in a firm contraction of the stomach with arrest of the bleeding and are effective even though the ulcer is located in the duodenum.

Transfusions are frequently indicated either as an emergency measure or to hasten the patient's recovery following the cessation of bleeding. When possible, these are best given slowly and in small amounts at a time when there is no active bleeding. Care should be taken that the blood pressure is not raised too rapidly. Although it is generally considered inadvisable to transfuse a patient who is still bleeding, it seems that the results are more frequently beneficial than harmful, even under such conditions. Patients can frequently be roused from coma by this means and in many cases it is a life saving measure. It becomes dangerous to withhold this procedure too long in the presence of a markedly lowered blood pressure, as death may occur suddenly under such circumstances.

In those patients in whom the hemorrhage has ceased but the blood pressure remains at a satisfactory level, a transfusion may not be necessary in spite of a very severe anemia. This is illustrated by our patient with eight per cent hemoglobin who recovered without transfusions. If the hemorrhage has been slow and continued over a long period of time the iron stores of the body may become depleted, and in these the administration of ferric ammonium citrate causes a surprisingly rapid regeneration of blood.

Surgical intervention is frequently advocated as a means of controlling the hemorrhage. There are serious objections to this procedure, however, as the patient who has lost large amounts of blood is a poor surgical risk in spite of preoperative transfusions and the surgical procedure is of necessity an extensive one, consisting of ligation of the vessel or resection of the ulcer bearing area. Many of these patients cannot be subjected to roentgenologic examination prior to operation so that the location and extent of the ulcer is not known preoperatively. Furthermore, it is impossible to predict at the onset of a hemorrhage how severe or prolonged this will be so that the surgical patients cannot be selected at that time. A rather high percentage of the patients will have repeated hemorrhages and since the chances of spontaneous cessation become less with each successive attack, this may be an indication for sur-

gery, provided it is attempted in a quiescent period between attacks of bleeding.

The most severe hemorrhages are apt to occur in older individuals in whom arteriosclerosis is present and the vessel walls have lost their elasticity and do not contract to control the bleeding. The ulcer is more likely to be chronic in these individuals so that the scar tissue in the ulcer wall also tends to prevent spontaneous cessation. There is less chance of controlling the hemorrhage in these patients with erosion of a large sclerotic vessel than in younger individuals.

#### CONCLUSIONS

An analysis was made of 1,046 cases of peptic ulcer and 257 were found with gross hemorrhage. The methods of treatment employed in such cases are discussed with special reference to the effects of transfusions. These are frequently a life saving procedure and should not be withheld because of the fear of elevating the blood pressure and increasing the hemorrhage. The reports in the literature on gastric lavage are very encouraging. Surgery is advisable during active bleeding only in exceptional instances.

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### TORSION OF THE PEDICLE IN OVARIAN CYSTS FOLLOWING DELIVERY\*

#### FREQUENCY AND SYMPTOMATOLOGY CASE REPORTS†

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The presence of cystic tumors of the ovaries has always been considered a serious complication of pregnancy. The reason is threefold:

1. Spontaneous abortion or premature labor occurs more frequently (according to Remy in seventeen per cent).

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2. During labor, obstruction of the pelvis by small, freely movable or fixed tumors may require radical interference, or, if not recognized early, may result in such fatal complications as rupture of the uterus or necrosis of the tumor followed by peritonitis.

3. After delivery, ovarian cysts are more likely to develop a twisting of the pedicle, because of their increased mobility following the evacuation of the uterus due to the laxity of the abdominal walls.

The high frequency of torsion of the pedicle during child-bearing is recognized both here and abroad by such obstetricians as Whitridge Williams, DeLee, and others. Bland,<sup>1</sup> for example, states that the frequency of torsion of the pedicle is increased from a general average of eight per cent to twelve per cent by pregnancy, and to more than twenty-two per cent by labor. This opinion, however, is not universally accepted. According to Mayer,<sup>2</sup> Fehling claims that the frequency of torsion during the lying-in period has been greatly exaggerated. Grotenfeldt<sup>3</sup> of the Engstrom Clinic, having seen twisting of the pedicle only one-half as frequently during the puerperium as otherwise, feels that a diminished frequency is to be expected, since sudden and vigorous rotating movements of the body are generally minimized or eliminated in childbed.

As a contribution to this controversy, ten cases of torsion of ovarian cysts are reported, six of which occurred in childbed. The peculiarities of these latter cases seem to reconcile certain differences of opinion and, in addition, stress one symptom of torsion of the pedicle which, although known, has not yet received the attention it deserves.

#### CASE ONE

Z. I., twenty-four years of age, was admitted January 25, 1933. The family history was negative.

*Present complaint:* The patient had noticed a tumor in the abdomen, which did not cause any discomfort. On December 1, 1931, when pregnant near term, an automobile accident was followed within two days by the delivery of a dead child. The puerperium was uneventful. Soon after delivery, the patient experienced pain in the right lower quadrant, which was especially marked at the time of menstruation, but never caused her to stop work. There was a rapid postpartum increase in the size of the abdomen, so that it was larger five weeks after, than before delivery. Since then it had increased little if any. The patient was told by her physician that she had an ovarian cyst, but she did not go to the hospital because she felt perfectly well otherwise.

*Examination:* The abdomen was enlarged by a flabby, distinctly fluctuating tumor the size of a full term pregnant uterus. There was no free fluid. The uterus was retroverted, but freely movable. The right ovary was palpable beside the uterus. The lower pole of the tumor could be felt indistinctly through the anterior vaginal wall.

*Diagnosis:* Cyst of the left ovary with incomplete twisting of the pedicle after delivery.

*Operation:* Laparotomy. After the cyst was exposed, it could be seen that the superficial peritoneal leaf had its own vessels running crosswise, independent of the blood supply of the cyst proper. After having drained about 8,000 c.c. of watery clear fluid by puncture, it was noted that the cyst arose from the left epoophoron. The fallopian tube was enormously stretched out, extending over the surface of the cyst. The pedicle of the cyst was found to be twisted to the left 100 to 120 degrees. The uterus was soft and slightly enlarged, and the right ovary was flat, five centimeters long by three centimeters wide, containing a corpus rubrum the size of a cherry. Extirpation of the cyst together with the left ovary, which was stretched to the length of ten centimeters was carried out, and after hemostasis the stump was peritonealized, and the abdomen closed. The veins of the infundibulopelvic ligament which constituted a part of the pedicle were enormously dilated. The patient was discharged ten days after operation. The histologic examination revealed a parovarian cyst of the broad ligament.

#### CASE TWO

P. A., twenty-five years of age, was admitted December 19, 1932. There had been one instrumental and three spontaneous deliveries.

*Present complaint:* The patient stated that during her last pregnancy she suffered more than usual from vomiting, and that after her spontaneous delivery August 11, 1932, the abdomen did not return to normal size, but immediately started to enlarge gradually. Six weeks after delivery she consulted a physician who diagnosed the condition as dropsy and ordered some medicine. Two weeks before admission, the same physician made a bimanual examination and found an ovarian cyst. He wished to tap this, but the patient refused and presented herself at the clinic, complaining of the abdominal enlargement, now greater than before delivery. There was no other complaint.

*Examination:* The abdomen was distended by a definitely fluctuating tumor which reached to the xiphoid. There was dulness over the entire abdomen with the exception of the flanks and the epi-

gastrium. The cervix was displaced high up behind the symphysis. The uterus was slender and freely movable. From its left cornu, a tightly stretched pedicle could be felt extending to the cystic tumor, the lower pole of which filled the entire true pelvis, but did not participate in the fluctuation which was so definite in the upper and major portion of the tumor.

*Diagnosis:* Cyst of the left ovary.

*Operation:* December 3, 1932. Posterior colpotomy immediately exposed the surface of the lower pole of the cyst, the entire surface of which was bound to the peritoneum by fine adhesions which could be separated easily by the finger. The cyst was punctured, and two gallons of fluid removed. The delivery of the emptied cyst was difficult because there were numerous solid parts and small daughter cysts which caught between the retractors, and because of a fist-sized daughter cyst, which had to be emptied by independent puncture. Moreover, there were innumerable fine adhesions between the omentum, the bowel and the surface of the cyst, which had to be clamped and cut during its delivery. The cyst had developed from the left ovary. Its pedicle was clamped and the cyst removed. The total amount of fluid removed was 8,500 c.c.

*Histologic diagnosis:* Pseudomucinous papillary cystadenoma. The postoperative course was prolonged by moderate fever. The patient was discharged on the twenty-fourth day after operation.

#### CASE THREE

A. D., thirty-five years of age, was admitted September 27, 1932. There had been four deliveries with three living children. The last delivery occurred August 22, 1932.

*Present complaint:* Following the last delivery, the patient's abdomen at first decreased in size as usual, but since getting up she had noticed a gradual increase in size, which, originally was more marked on the right side of the abdomen. The abdomen was distended to the size of a full term pregnancy by an unusually distinctly fluctuating, but flabby ovarian cyst. The uterus was retroverted, but freely movable. No tumor nodules could be felt in the cul-de-sac.

*Clinical diagnosis:* Unilocular ovarian cyst.

On the fourth day after admission, the patient developed a temperature elevation to 103 degrees, and positive chest findings which were interpreted as bronchiectasis with an acute bronchitis. Since breathing was embarrassed by the encroachment of the enlarged abdomen upon the thoracic cavity, vaginal removal of the cyst was agreed upon in spite of the fever. On October 11, 1932, under

spinal anesthesia, anterior colpoceliotomy was performed. The lower pole of the cyst, exposed by retractors, was found to lie at the level of the pelvic brim. The cyst was punctured and 10,000 c.c. of watery clear fluid were removed by suction. The emptied cyst was delivered without difficulty, two clamps placed upon its pedicle, and the cyst removed. One area on the surface of the cyst was covered with innumerable ecchymoses and a few fine adhesions, indicating that there must have been some disturbance to the blood supply of the cyst, very probably a result of partial twisting of its pedicle.

*Histologic diagnosis:* Pseudomucinous cystadenoma of the ovary.

*Postoperative course:* The temperature after rising to 102.8 degrees on the day following operation, dropped to a lower level than previous to operation. On the ninth day after operation, the patient was transferred to the medical service for further treatment.

#### CASE FOUR

B. P., twenty-six years of age, was admitted February 6, 1932. There had been one spontaneous and two operative deliveries, all three children being alive. The family history was negative. The patient had always been in good health.

*Present complaint:* Since shortly before the onset of the last pregnancy, the patient had experienced occasional pains in the left lower quadrant, never severe enough to interfere with her housework. Two days before admission, the patient had experienced a sudden increase of the pain, which persisted for twenty-four hours and required hypodermic medication. The abdomen had increased so rapidly in size postpartum that it was larger six weeks following delivery than during the last month of pregnancy.

*Examination:* The abdomen was distended by a fluctuating cyst, which arose to within three fingers of the xiphoid process. The uterus was lifted up but normal.

*Diagnosis:* Cyst of the left (?) ovary.

*Operation:* The operation, which had to be postponed because of the sickness of her child, consisted of laparotomy. After delivery of the cyst, which was multilocular and contained about two gallons of pseudomucinous fluid, it was evident that it had developed from the left ovary, and that the left cornu of the uterus was lifted up and markedly distorted. The pedicle of the cyst was twisted to the right 120 degrees. The right adnexa were normal. There was no evidence of corpus luteum formation in the right ovary, although the patient had just finished men-



struating. The cyst was extirpated and an uneventful postoperative course ensued. The patient was discharged nine days after operation.

CASE FIVE

K. S., thirty-two years of age, was admitted March 1, 1922. There had been one normal delivery, four weeks previously.

*Present complaint:* After an uneventful puerperium, the patient was out of bed for the first time three days after delivery, without experiencing any discomfort except a slight dull soreness in the left lower quadrant. Since then there had been such a rapid increase in girth that the abdomen was larger than ever before.

*Examination:* The abdomen was enlarged by a cystic tumor larger than a full term pregnant uterus. There was no free fluid. An indistinct tenderness was present in the left lower quadrant over the tumor. The uterus was dislocated to the right side, its left cornu being pulled upward by the cystic tumor, the lower pole of which could be just reached through the posterior vaginal fornix.

*Diagnosis:* Cyst of the left ovary.

*Operation:* On March 2, 1922, a posterior col-poceliotomy was performed. The lower pole of the cyst could be exposed only by long retractors. Seven thousand c.c. of fluid were removed by puncture, while the cyst was gradually pulled out through the vagina. The delivery of the uppermost part of the cyst required the blunt separation of comparatively newly-developed adhesions over an area the size of the palm of the hand. This part of the wall of the cyst was spotted with numerous ecchymoses. Inspection of the pedicle showed distinctly that the cyst had been twisted

to the right 180 degrees. Two clamps were placed on the uterine insertion of the cyst and later replaced by sutures. Recovery was uneventful. The patient was discharged twelve days after operation.

CASE SIX

M. R., twenty years of age, was admitted January 19, 1934. The first pregnancy had terminated uneventfully on December 22, 1933. Five years previously, an appendectomy and tonsillectomy had been performed.

*Present complaint:* Two years before admission the patient had noticed a hard round movable tumor in the left lower quadrant of the abdomen. This tumor was the size of a grapefruit when she became pregnant. After delivery, the abdomen remained distended, so that the physician suspected a twin pregnancy. During the four weeks following delivery, the abdomen increased rapidly in size, but caused no other symptom than a sensation of increasing fullness and heaviness.

*Examination:* The abdomen was distended by an enormous flabby fluctuating tumor. The right flank was tympanitic, but the left flank was dull. The uterus was anteverted and flexed, freely movable and of normal size. The lower pole of the tumor could not be reached from the vagina as the cyst, because of its size, had not entered the pelvis.

*Diagnosis:* Ovarian cyst, which presumably had grown rapidly without other symptoms, because of the twisting of its pedicle. It was decided to extirpate the tumor by laparotomy, although it would have been easy to drain and remove the cyst through a vaginal incision.

*Operation:* Median laparotomy revealed a unic-  
locular cyst of the right ovary with the pedicle

CHART I  
CASES IN WHICH THE TORSION OF THE PEDICLE OCCURRED FOLLOWING DELIVERY

Case	Age	Immediate Symptoms of Torsion	Clinical Symptoms	Time elapsed from Onset of Symptoms	Size of Cyst	Pathology	Finding at Operation	Extirpation
1	24	None	Increase in size fol. del.	5 weeks	8,000 c.c.	Parovarian cyst	Pedicle twisted 120°	Abdominal
2	25	None	Increase in size fol. del.	6 weeks	8,000 c.c.	Pseudo-mucinous cyst	Ecchymoses and fresh adhesions	Vaginal
3	35	None	Increase in size fol. del.	5 weeks	10,000 c.c.	Pseudo-mucinous cyst	Fresh adhesions	Vaginal
4	26	Slight pain	Increase in size fol. del.	6 weeks	8,000 c.c.	Pseudo-mucinous cyst	Pedicle twisted 180°	Vaginal
5	20	None	Increase in size fol. del.	4 weeks	7,000 c.c.	Serous cyst	Pedicle twisted 180° ecchymoses	Vaginal
6	20	None	Increase in size fol. del.	4 weeks	18,000 c.c.	Serous cyst	Pedicle twisted 90°	Abdominal

twisted 90 degrees, and containing eighteen quarts of watery clear fluid. The uterus and left adnexa were normal. The cyst was extirpated and the patient was discharged ten days later after an uneventful recovery.

The clinical picture in these six cases is very much the same. Only one of the patients (Case No. 6) knew she had a cyst. Except for very moderate pain in Case No. 4, the torsion occurred without causing immediate symptoms, but was followed by such a rapid increase in size of the cyst that the abdomen was larger four to six weeks after childbirth than before delivery. In two cases, multiple ecchymoses in the wall of the cyst and fresh adhesions to neighboring structures, gave evidence that twisting had occurred, a condition which was actually demonstrated in four instances. In no case had torsion exceeded 180 degrees, which may explain the absence of immediate symptoms.

Since twisting of the pedicle is ordinarily associated with a typical attack of pain with or without peritoneal symptoms, partial torsions, with rapid increase in size as the only result, can easily be overlooked at operation, especially if the cyst is removed by the vaginal route. Had our attention not been drawn to this point by previous similar experiences, it is very possible that several, if not all of these cases, might not have been recognized as torsions of the pedicle following delivery.

We feel that every rapid increase in size of a benign ovarian cyst prompts the diagnosis of a previous torsion of the pedicle. *The fact that these partial torsions during delivery and postpartum do not cause immediate symptoms and therefore are often not recognized, accounts for the doubt concerning the higher frequency of twisting of the pedicle of ovarian cysts during the puerperal period.*

Comparison of these first six cases, with the remaining four cases of torsion seen during the same interval in non-pregnant women, shows distinctly that the absence of immediate symptoms is a privilege of the puerperal state.

#### CASE SEVEN

M. S., a nullipara, twenty-seven years of age, was admitted March 29, 1932.

*Present complaint:* Three weeks before admission, following an attack of "intestinal flu" of ten days' duration, the patient experienced cramp-like pains in the left lower quadrant, which soon shifted to the right side. Since this time the abdomen had gradually enlarged.

*Examination:* The abdomen was distended by a cystic tumor the size of an eight months' preg-

nancy. The uterus was retroverted and retro-displaced by the lower pole of the cyst which bulged the anterior vaginal wall. There was no ascites.

*Diagnosis:* Cyst of the left ovary, probably unilocular in character.

*Operation:* Was postponed because of constant elevation of temperature, for which no cause could be found in spite of repeated general and gynecologic examinations. On the eighteenth day after admission, a definite tenderness was detected on the surface of the cyst itself. Considering that the rise in temperature might be due to some degenerative change in the cyst wall with localized peritoneal irritation, operation was decided upon in spite of the continued fever. A laparotomy was performed on April 16, 1932. The wall of the cyst was thickened, slightly edematous, covered with multiple ecchymoses, and everywhere adherent to the surrounding organs by newly developed adhesions which were easily separated. After 8,000 c.c. of a slightly cloudy, brownish fluid were removed by suction, the cyst was delivered, and was shown to have developed from the left ovary. The pedicle was twisted 180 degrees to the right. After removal of the cyst, large, raw oozing areas of parietal peritoneum remained, especially in the lower part of the abdomen. The operation was justified by the further course, as the temperature returned to normal on the third day after operation, and the patient was discharged on the tenth postoperative day after an uneventful recovery.

#### CASE EIGHT

M. R., sixty-four years of age, was admitted February 20, 1933. There had been one normal delivery. Gallbladder (?) attacks several years ago had subsided without operation. The menopause occurred fourteen years previously.

*Present complaint:* Six months before admission pain developed in the left lower quadrant, which subsided after several days without requiring bed rest. There had been no pain later. For the past four to six weeks the girth had increased without definite pain but with moderate soreness over the entire abdomen.

*Examination:* The abdomen was enlarged by a tightly-filled, but freely movable cystic tumor the size of a six months' pregnancy. There was no free fluid. The cervix was gaping and showed several polypi. The uterus was movable but retroverted. The adnexa could not be felt. Douglas pouch was free from nodules.

*Diagnosis:* Cystic tumor of the ovary. The rapid growth was apparently caused by a twisting of the pedicle, rather than to malignancy.



*Operation:* Median laparotomy. A multilocular pseudomucinous cyst with hemorrhages in the wall, was attached to the peritoneum and the intestines by recent adhesions which oozed considerably after blunt separation. The cyst, which had developed from the right ovary, was partially emptied by puncture. It was twisted 180 degrees to the left, the pedicle being edematous and containing extremely dilated vessels. After removal of the cyst, a total hysterectomy was performed and the abdomen closed. The postoperative course was complicated and delayed by separation of the abdominal wound on the sixth day, requiring secondary closure. This was followed by a further uneventful recovery.

CASE NINE

T. F., forty-five years of age, was admitted November 16, 1922. She had had two normal deliveries.

*Present complaint:* There had been a rapid increase of girth during the previous six to eight weeks, with no pain except a moderate attack of "gas pain" one night, about eight weeks before admission.

*Examination:* The abdomen of the otherwise apparently healthy patient was enormously distended by an ovarian cyst apparently arising from the right ovary, since the left could be felt distinctly on bimanual examination. The unusual distinctness of fluctuation permitted the assumption that the cyst was unilocular.

*Vaginal operation:* November 17, 1922, consisted in anterior colpoceliotomy and delivery of the cyst without difficulty after removal of 8,000 cc. of clear yellowish fluid. Fresh adhesions and echymoses were present in the wall of the cyst. Recovery was uneventful and the patient was discharged eleven days after operation.

CASE TEN

K. K., fifty-three years of age, was admitted April 10, 1924. She had had several normal deliveries.

*Present complaint:* Six weeks before admission there was a sudden attack of pain in the left lower quadrant with nausea, fever and rigidity of the slightly distended abdomen. These symptoms subsided in two days, but the abdomen had increased rapidly in size.

*Examination:* The abdomen was distended by a cystic tumor the size of a term pregnancy. There was no free fluid. Bimanual examination revealed a normal ovary on the right side, while the left could not be palpated.

*Diagnosis:* Cyst of the left ovary which had grown rapidly after twisting of the pedicle.

*Vaginal operation:* On April 11, 1924, the cyst was removed through an anterior colpoceliotomy after the removal of 5,000 to 6,000 c.c. of watery yellowish fluid. Some fine adhesions between the intestines and the surface of the cyst were separated bluntly during its delivery. The pedicle was twisted 180 degrees. Recovery was uneventful and the patient was discharged on the ninth post-operative day.

The chief complaint which caused these four women to seek relief, was the same as in the first six patients, namely, rapid increase in girth. The previous histories, however, as well as the anatomic findings were markedly different. Three of these latter patients reported a typical attack, one patient, several attacks of pain, following which enlargement of the abdomen developed during the subsequent three to eight weeks.

The findings at operation indicated, except in the patient without immediate symptoms (Case No.

CHART II  
FOUR CASES OF TWISTED PEDICLE CYST IN NON-PREGNANT WOMEN

Case	Age	Immediate Symptoms of Torsion	Clinical Symptoms	Time elapsed from Onset of Symptoms	Size of Cyst	Pathology	Finding at Operation	Extirpation
7	27	Localized Abdominal pain	Rapid increase in size	3 weeks	8,000 c.c.	Pseudo-mucinous	Twisted 180° ecchymoses recently formed periton. adhesions	Abdominal
8	64	Repeated previous attacks	Rapid increase in size	6 weeks	7,000 c.c.	Pseudo-mucinous	Twisted 180° hemorrhages in cyst wall adhesions	Abdominal
9	45	Marked gas pain	Rapid increase in size	6-8 weeks	8,000 c.c.	Serous	.....	Vaginal
10	53	Typical attack	Rapid increase in size	6 weeks	6,000 c.c.	Serous	Twisted 180° adhesions	Vaginal

9), that, although the torsion never exceeded 180 degrees (similar to first six cases), there was considerably more bleeding in the wall of the cyst, and richer and firmer adhesions. The absence of immediate symptoms from torsion of the pedicle after delivery seems due, less to the incompleteness of the torsion, as we were at first inclined to believe, than to the relaxation of all the abdominal structures, and their increased ability to adapt themselves to changes in their topography.

#### SUMMARY

1. Six cases of ovarian cyst with twisting of the pedicle following delivery, and four cases seen in non-pregnant women are recorded.

2. In all ten cases, the event was followed by rapid growth of the cyst, which seems to occur more frequently than ordinarily believed.

3. There is an increased disposition toward twisting of the pedicle during and following delivery.

4. This increased disposition has been doubted because twisting of the pedicle at this time does not cause immediate acute symptoms, and is therefore often not recognized.

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#### MALPRACTICE\*

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Council Bluffs

It is my belief that there is no profession whose members, without the slightest hope of material reward, give so generously of their time and training as the members of your profession. With evidence of this generosity and beneficence on every hand we might expect that mankind would never tire of paying homage to a profession that has done so much to make this world a better place in which to live; but frequently, as in other affairs of life, our expectations are quite at variance with reality.

At the present time when the demands of the needy are being met by the expenditure of vast sums of public money, we find the merchant and the grocer being willingly paid out of public funds for the goods which they supply to those on the relief rolls. At the same time we witness our public officials insisting that the members of your

profession give their time and services without remuneration. Not only is this evidence of a mistaken conception of philanthropy, but it is proof as well of lack of appreciation of the great service rendered humanity by your profession. We erect monuments to our Caesars and our Napoleons, but we are prone to forget the names of Pasteur, Morton, Walter Reed and countless other conquerors of pestilence and disease.

We see evidence of this lack of appreciation all too frequently in our courts. On occasions we see a member of your profession, who has sat tirelessly night and day at the bedside of some patient without hope of reward and with full knowledge that he was waging a losing fight, sitting in a court room forced to submit to the judgment of twelve laymen the question of whether or not he should pay in damages because his best judgment and tireless energy failed to conquer something that throughout the ages has been unconquerable. This is often the picture presented by a malpractice action. This type of action is not new. More than fifty years ago an eminent member of your profession, Dr. Oliver Wendell Holmes, called the profession's attention to the fact that: "The profession has just been startled by a verdict against a physician ruinous in an amount—enough to drive many a hard working practitioner out of house and home—a verdict which leads to a fear that suits for malpractice may take the place of the panel game and child stealing as a means of extorting money. If the profession in this state, which claims a high standard of civilization, is to be crushed and ground beneath the upper millstone of the dearth of educational advantages and the lower millstone of ruinous penalties for what the ignorant ignorantly shall decide to be ignorance, all I can say is 'God, save the commonwealth of Massachusetts.'"

You may be interested in knowing something of the rules of law upon which malpractice actions are based. If you are not interested I am bold enough to assert that you should be, because you are not immune. You may get your conception of a malpractice case in a court room as you gaze into the faces of twelve ignorant laymen who, as Dr. Holmes expressed it, will ignorantly determine whether the charges of your ignorance should not sustain a substantial verdict against you.

What is a charge of malpractice? The word "malpractice" is derived from the two Latin words "mala" and "praxis" meaning "bad practice." As applied to a physician, it is nothing more than a charge that the physician has negligently performed his duty toward his patient. Negligence is simply the failure of one person to exercise the degree of care in the performance of a

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duty owed to another which he should have exercised under the circumstances surrounding him. This leads to the inquiry: what is the duty that a physician owes to his patient which, if he fails to perform, constitutes negligence? That duty, as stated by the Supreme Court of Iowa, is simply this: "A physician and surgeon, when employed in his professional capacity, is required to exercise that degree of knowledge, skill, and care which physicians and surgeons practicing in similar localities ordinarily possess."<sup>1</sup>

A failure by a physician to exercise the degree of care in the treatment of a patient that physicians in similar cases in like localities exercise in the treatment of their patients is negligence which, if such failure causes a patient to suffer damage, justifies the imposition of a judgment for damages against the physician.

Before a physician can be held to the degree of care just stated, of course, the existence of the relationship of physician and patient must first be established. This does not depend, however, upon the fact of whether the services are rendered gratuitously, or whether they are rendered with expectation of reward. In the first instance a physician has the absolute right to decline to serve a patient; but if his services are sought and he elects to accept the patient, then the relation of physician and patient is created and there is imposed upon him the obligation of bringing to that patient, in the treatment of his ailment, that degree of care, skill and knowledge possessed and exercised in similar localities by physicians in the treatment of like ailments. This degree of care which the law imposes upon a physician does not mean, in the absence of a special contract, that a physician is a warrantor or guarantor, that he will effect a cure, or that his treatment will be beneficial. This degree of care which the law requires of a physician does not mean that a physician must exercise the highest degree of care known to the profession in the treatment of the ailment from which his patient suffers. In determining just what is the degree of care which the physician must exercise in a particular case, the locality in which the physician practices bears an important part. He must exercise the degree of care that the average physician practicing in the same or similar localities would exercise. Unless he is a specialist or holds himself out as a specialist he does not have to exercise the degree of care, skill or knowledge that a specialist would exercise in the treatment of the particular ailment from which his patient is suffering. So, a physician's conduct in rural communities is not measured by the skill or knowledge exercised by a practitioner in an urban center.

Having in mind now the law's requirement that every physician and surgeon must bring to his patient that degree of care, skill and knowledge usually exercised by physicians or surgeons in like localities in the treatment of similar cases, it is interesting to see how our courts have applied this standard in malpractice cases. It is interesting to see what our courts have required of a plaintiff in the way of proof in such an action to entitle a plaintiff to have a jury of laymen speculate upon the question of whether or not the plaintiff should be awarded damages.

In this connection I want to say to you that in my judgment the Supreme Court of Iowa has been consistently sounder in its views upon this subject—it has been fairer with the physicians than have the courts of many other jurisdictions. While the general rules are the same in Iowa and Nebraska, there is as much difference between day and night in the way these rules have been applied by the supreme courts of the two states. I can show you any number of cases where the Supreme Court of Nebraska has sustained verdicts against physicians and surgeons which, in my judgment, if they had been passed upon by the Supreme Court of Iowa, our court would have held that the evidence was insufficient to sustain the verdict.

In proving a malpractice case a plaintiff must establish, as I have said before, first of all, that the relationship of physician and patient existed at the time of the alleged malpractice—that is, at the time of the commission of the particular act of negligence charged against the physician. This, of course, a plaintiff can generally do.

The plaintiff's next step must be to establish just what treatment was followed by the physician charged with the malpractice. This, a plaintiff can generally do although, I am sure if you would hear a layman in a court of justice attempting to describe a course of treatment given to him by his physician, the physician who rendered the treatment would be unable to recognize it. However, a plaintiff cannot stop here. He must go further. He must, by competent proof, establish the standard by which the acts of the physician are to be determined, from which the fact of negligence or want of care can be determined. By this I mean that he must establish by competent proof what is the general method of treatment of similar cases as followed by physicians generally in like localities. This I have said must be established by competent proof. A plaintiff cannot call a plumber, a barber, a veterinarian, a minister or any other layman, and seek to establish by such a witness what is the general practice of treatment in similar cases by physicians in like localities.

That will not do. It will not do because this is a question concerning which a layman is ignorant. It is a question for a physician. It is a scientific question and hence the Supreme Court of Iowa is committed to the doctrine that this necessary proof must be supplied by a physician and a physician only. So a plaintiff then must call one or more physicians who must testify in order that his case succeed, as to the method of practice generally followed in the treatment of similar cases by physicians in like communities. If such physicians testify to a different method of treatment than that followed by the defendant in the particular case, as the method which physicians generally follow in like communities in the treatment of similar cases, then the plaintiff has made a case for a jury on the question of negligence. By that I mean that the plaintiff is entitled to have his case submitted to a jury on the question of negligence. He is entitled to have a jury speculate as to whether the defendant failed to exercise that skill, knowledge and method of treatment in the particular case which physicians in similar localities would have exercised or followed.

Therefore, in getting one of these cases to a jury there must be another physician testifying for the plaintiff, and while no man has higher admiration for your profession than have I, nevertheless in the past my high regard for it has sometimes been slightly jarred when I have seen a physician take an oath and coolly condemn the practice followed by a brother physician. I know, and you know, that scarcely are two medical cases alike. I know, and you know, that what might prove effective in one case fails in another. I know, and you know, that a physician acquainted with a patient—sitting by his bedside—working with his patient—perhaps in the shadow of death—is in a better position—far better—to pass judgment on the question of what should or should not be done for that patient, than some physician who never saw the case and whose only knowledge of the case is what he learned in the court room. So I say to you that if a doctor when called to testify in such a case would frankly and honestly say to the court and jury that what should be done in a similar case and what would be done in like localities would depend largely upon the sound judgment of the physician in charge—familiar with the situation—then verdicts against physicians and surgeons would be few and far between.

In holding that expert testimony is required before a plaintiff is entitled to have his case go to a jury on the question of want of care upon the part of the physician, the Supreme Court of Iowa has said: "Again, while the method of

treatment adopted by defendant is fully pointed out and described in the testimony, no witness was called by plaintiff to show that this was not regarded as proper practice by the profession in the locality where defendant practiced. If there be any such testimony, it is to be inferred from what defendant did or failed to do, viewed from the standpoint of a nonexpert, or deduced from what some of the medical experts said while on the stand. As a general rule, it may be safely affirmed that, in matters requiring special skill and training, it is not permissible for laymen as nonexperts to set up any artificial standards as to methods of treatment."<sup>2</sup>

Again, our Supreme Court said: "There is no implied guaranty of results, and all the law demands is that the practitioner bring to the service of his patient and apply to the case that degree of skill and care, knowledge and attention, ordinarily possessed and exercised by practitioners of the medical profession under like circumstances and in like localities; and it is the general holding of the courts that the bare fact that full recovery does not result, or that a surgical operation is not entirely successful, is not, in and of itself, evidence of negligence; and, in the absence of any showing from those learned in the profession that there was a failure to do that which ought to have been done in the treatment of the injury, or that there was that done which ought not to have been done in the treatment of the injury, there can be no recovery."<sup>3</sup>

Again the Supreme Court of Iowa, said: "The physician is bound to bring to the service of his patient and apply to the case that degree of knowledge, skill, care, and attention ordinarily possessed and exercised by practitioners of the medical profession under like circumstances and in like localities. Whether the defendant exercised the degree of care and skill required of him cannot be determined from the testimony of laymen or nonexperts, since it is only those learned in the profession who can say what should have been done, or that what was done ought not to have been done."<sup>4</sup>

Again our court said: "As we have seen, it is not the mere failure to effect a cure that determines the practitioner's liability, and whether he used the skill and care required is, of necessity, to be determined from the expert testimony of those who are competent to say what skill and care ought, according to the ordinary standards of the profession, to be used in a given case. We are clearly of the opinion the plaintiff produced no evidence tending to show that the methods used by Dr. Walsh and the care and attention given by him to appellant in any material respect fell



short of those ordinarily used by practitioners in like localities in treating like injuries."<sup>4</sup>

However, in these cases a plaintiff is not entitled to have his case submitted to a jury by merely offering evidence of the relationship of physician and patient and evidence that the treatment followed by the physician was different than that followed by physicians in treating like cases in similar localities. He cannot stop there and be successful in his case. He must also offer evidence which will support a finding that because of the alleged negligence of the physician, he suffered damages. In other words, he must offer proof which will support a finding by a jury that the negligence he charges against the physician was the proximate cause of the damage he claims to have sustained. Now the question whether the injury or the damage for which the plaintiff is seeking recovery, resulted from the alleged act of negligence charged against the physician is the subject upon which laymen have no right to speak. Here again the plaintiff must call for the aid of another physician for our Supreme Court has held squarely that: "It cannot be disputed that the correct treatment and probable results are scientific questions, and alleged malpractice in any case must be substantiated by the testimony of expert witnesses. It is the province of experts, physicians and surgeons, to say whether the treatment and acts of an attending physician in any case were or were not proper."<sup>5</sup>

The rule followed in our state was well stated by the Supreme Court of Michigan as follows: "The question whether the loss of the plaintiff's foot was attributable to anything that the plaintiff claims the defendant did or omitted to do is a scientific question, which the jury cannot determine for itself, and can only be answered by an expert; and, inasmuch as no expert or medical man or surgeon has stated that the loss of the foot, in his opinion, came from anything the defendant did or omitted to do, therefore, the defendant cannot be held liable."<sup>6</sup>

Again our Supreme Court said: "Plaintiff, in a case of this character, may not stop upon a showing that the treatment or absence thereof presents a jury question on the pleaded negligence, and then have the jury turned loose, to set up their own standards, as nonexperts, as to the proximate cause of death. The only recognized standard in such cases is essentially within the domain of expert testimony."<sup>5</sup>

It is apparent then that the third link in a plaintiff's case of alleged malpractice, like the second link, must be forged out of the testimony of a physician. Without such testimony the case must

collapse. Let me cite you an actual case recently decided by our Supreme Court which brings out my thought.

This case was recently tried in this judicial district. A verdict was directed for the doctor in the lower court, and the case was appealed to the Supreme Court and it was there held that the verdict for the doctor was properly directed. The facts were that a woman cut her foot while in her yard at her home. She thought nothing of it and in six or seven days thereafter evidence of infection was apparent. The plaintiff's witnesses testified that she was taken to the doctor who did nothing for it. I do not mean that the doctor, in fact, did nothing, but that is what the plaintiff's witnesses testified, and for the purpose of a motion for a directed verdict their testimony is taken as true. A few hours after seeing the doctor, the woman went into convulsions and died within a few hours. Her administrator brought the action against the physician claiming that he was negligent in failing to administer anti-tetanic serum. However, the plaintiff offered no witness—that is, no physician who testified that if the physician had administered the serum when he saw the woman that she would not have died. The motion for a directed verdict was based upon the contention that the plaintiff was not entitled to have the case submitted to a jury in the absence of expert testimony that if the serum had been administered she would in all probability have lived. That contention was sustained in the lower court and affirmed in the Supreme Court. That court in its opinion said: "In other words, it is not sufficient to show that the defendant in a malpractice case did or neglected to do a particular act or acts and that following this commission or omission on his part unfavorable conditions or happenings occurred. A causal connection between the negligence and the unfavorable condition or happening that followed must be shown and this must be done by the testimony of expert witnesses. . . . The record unmistakably establishes that any attempt to show that such death was caused by any act or omission to act on the part of appellee, instead of by the disease from which she was suffering, would be pure speculation and conjecture. If the attempt to thus fix the cause of the death of the decedent would be speculation and conjecture on the part of the experts themselves it is clear beyond all doubt that the question of the cause of such death should not be submitted to a jury." I might add that in my judgment, if this case had been submitted to the jury a large verdict for the plaintiff would have resulted, but the court following the rule I am talking about refused to permit the jury to

base an unjust verdict upon nothing more than pure speculation and conjecture.

From what I have said, in order for a plaintiff successfully to maintain a malpractice action in this state, it is necessary that the plaintiff establish the following essential matters:

1. The relationship of physician and patient.
2. The treatment followed by the defendant in the particular case.
3. That such treatment was not regarded as the treatment which would be followed by physicians generally in similar localities in treating like cases. This essential element must come from some member of the medical profession. It can come from no other source.
4. That the injury or death for which damages are sought resulted as the proximate result of the alleged improper treatment, and here again this absolutely essential element to the successful prosecution of a malpractice case must come from the medical profession.

What I am attempting to emphasize is this thought: in most malpractice cases the medical profession itself holds the key that will prevent what, to my mind, are unjust, unfair verdicts. I am not advocating that one physician ought to commit perjury for the sole purpose of protecting another member of his profession, but what I do say is this: a physician who knows nothing from first hand information of the problem that confronted his fellow practitioner as he toiled to alleviate suffering or save human life, does not know as much about that case as the physician in charge of it; and, after all, in practically every case it is a question of best judgment.

If that is true—if the physician who was in charge of the case was in the best position to use his best judgment as to what should be done, then I cannot be mistaken when I say that a physician who never saw the case—who knows nothing about it except what he has been told—should be very slow to condemn and criticize and thus assist in carrying the case to a jury, and perhaps be the direct cause of an unjust verdict. To the physician who does that thing without first realizing the great responsibility he is assuming, I simply say "chickens come home to roost. He may be the next one whose professional ability—whose integrity will be swept aside by a jury ignorantly ignorant," but that does not hesitate through sympathy to brand him as an incompetent.

There is another matter to which I desire to call your attention because it is frequently involved in malpractice cases. I know of two cases pending at the present time in which the charge of malpractice is based upon the contention that

the physician abandoned the patient. I said in the beginning that a physician has the absolute right to determine what patient he will serve. That is correct; but when the relationship of physician and patient is once created the physician's obligation to continue attention can be terminated only by the cessation of the necessity which gave rise to the creation of the relationship or by discharge of the physician by the patient, or by the physician's withdrawing from the case after giving the patient reasonable notice to enable the patient to secure other medical attendance. If occasion ever arises and any of you desire to withdraw from a case you are handling, by all means give the patient reasonable notice of your intention to withdraw so that the patient may secure other medical attendance. In this connection I suggest that your notice of intention to withdraw be given the patient in the presence of witnesses who will be available should a charge of abandonment be made later against you by the patient. Preferably the notice should be in writing in the form of a letter to the patient and then there can be no controversy about the matter.

I have tried to touch briefly the main questions involved in a malpractice action and tell you something of those phases of such an action which, to my mind, are most important. I want to leave this thought with you—when you hear of a malpractice case always remember that if the action is successful, in all probability the success was due to the testimony of some physician who assumed the rôle of critic—who was willing to go upon the witness stand and criticize some fellow practitioner for what he did or failed to do under the set of circumstances which confronted the physician, and this regardless of the fact that he probably knew nothing of the situation which confronted the physician whose work he criticizes.

Gentlemen, the history of your profession is the story of mankind's advancement. It is the story of man's climb from barbarism to our present civilization. The history of your profession is a fascinating and dramatic story. The time will come when mankind will erect memorials in honor of the profession that has, as its sole purpose, the alleviation of human pain and suffering. When that time does come malpractice actions will be relics of the past and they will serve only as reminders of man's ingratitude toward the greatest profession.

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IRRADIATION TREATMENT OF  
SUPERFICIAL MALIGNANCIES\*

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Ever since the discovery of the roentgen ray in 1895 and radium in 1896, irradiation has had a deservedly prominent place in the treatment of certain malignant conditions. As early as January, 1896, the biologic effects of the roentgen ray were noted and the newly discovered form of energy was being suggested as a method of combating superficial neoplasms and inflammations. That the rays of radium would also affect living tissue was soon discovered and the way was paved for the complementary use of the two methods of treatment combined with the older and tried surgical procedures.

The first lesions which were treated were almost all of the basal cell type and it was not long before irradiation began to be the method of choice in the care of this type of superficial malignancy. However, there were enough failures among cases of epidermoid or squamous carcinoma treated by irradiation to cause many workers to feel that this type of carcinoma was one which should never be cared for by anything except surgical methods.

In order of decreasing sensitivity, Ewing<sup>2</sup> places basal cell carcinoma fourth in a list of seven groups while the squamous cell type appears in the sixth group. This relative position in a table of sensitivities is now well recognized by those who use irradiation therapy. It is also well known that lesions which grossly appear to be identical will respond in vastly different ways to the same amount of treatment, and that it may take two or three times as much irradiation to eradicate one lesion as another even when the lesions have the same microscopic classification<sup>4</sup>. It has not been so universally recognized, however, that a large percentage of all superficial epidermoid or squamous cell carcinomata can be successfully treated by irradiation. It is important to give a maximum amount of treatment in each instance for one cannot tell before hand which lesion is going to be refractory, even though it may have been proved, histologically to be of the basal cell type. We have had a few cases that have persisted even after the application of 2,700 roentgens but these are rare.

It is not my purpose in this short discussion to hold up irradiation as a method of treatment in competition with the older methods of surgical attack, but to show that we do have a method that

stands by the side of surgery in its value and also that in certain instances it is definitely to be preferred.

Obviously it is a relatively simple matter for a surgeon to remove a carcinoma from the back of the hand or neck or some other part of the body where there is adequate skin for closure. In such cases it is perfectly satisfactory from the standpoint of eradication of disease and of cosmetic result. In other locations, however, such as on the nose, about the eye, and on the lip, it may be either difficult or impossible to close the wound, or else the defect will be unsightly and unsatisfactory to the patient. Irradiation in these cases will usually cause complete regression of the lesion with restoration of normal contours. Certainly this is more satisfactory to the patient and to his physician if each can be as sure that the results, both early and late will be as good as with any other method. Miescher<sup>6</sup> has made a good comparison of results of radium and roentgen ray irradiation as well and finds them about the same. It is also amply proved that permanence of results



May 31, 1932

February 14, 1933

Fig. 1. A lesion such as this can be taken care of only by some non-surgical means. Treated by roentgen ray only.

are just as good with irradiation as with surgery. In any case adequate treatment must be given. Good surgery is better than inadequate irradiation and certainly poor surgery is not as satisfactory as irradiation in competent hands.

Epitheliomata of the lip have until recent years been considered as being amenable only to surgery but it is now recognized by many observers that properly applied irradiation, either roentgen ray or radium, will give just as good results—and without the resulting defect. I do not decry the use of surgery in these malignancies of the lip but do feel the necessity of emphasizing that there is another equally satisfactory method of treatment.

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## TECHNIC

It has been emphasized by many authors<sup>1, 3, 5, 6</sup> that relatively intensive doses must be administered in the treatment of superficial malignancies. Some authors prefer to give the treatment at one sitting, while others give larger doses but divide

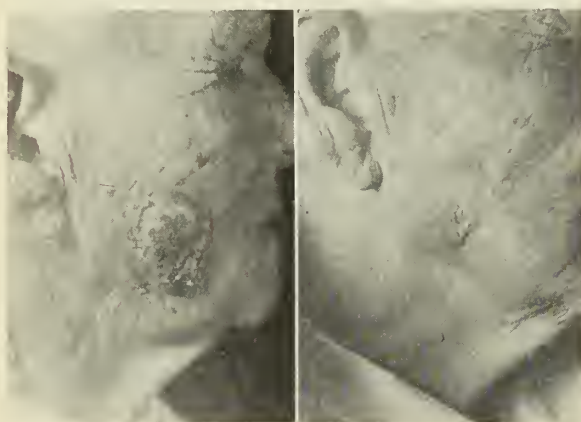


May 14, 1931

July 14, 1931

Fig. 2. Surgery would be satisfactory for the neck lesion, but would be very disfiguring to the lesion in the nasolabial fold. Roentgen ray only.

them into smaller components and administer them at intervals of from twenty-four to seventy-two hours. In our own work we prefer ordinarily to use the roentgen ray generated at 133 K.V. and filtered through either 0.3 mm Al. or 1.0 mm Al. Erickson and Stenstrom<sup>1</sup> use 100 K.V. with no filter and Stevens<sup>8</sup> prefers to use 200 K.V. Personally I feel that it makes little if any differ-



August 10, 1932

December 17, 1932

Fig. 3. This lesion could have been removed surgically, but in an elderly person it is much less of a shock to irradiate it. Cosmetic result quite satisfactory. Roentgen ray only.

ence as long as enough treatment is given. In order to duplicate results, it is best to measure the dosage in roentgens, including also, of course,

a record of all other factors used. In this way other workers have an adequate means of judging what has been given. Our total dose is ordinarily divided into three parts, which are given at intervals of seventy-two hours, although occasionally the total dose is administered in five or six sittings.

The work of Regaud and his associates<sup>7</sup> indicates very definitely that in general the administration of irradiation is followed by better results when given with high filtration and low intensity and this is a particularly desirable condition when radium is to be used. They feel that the differential of sensitivity of abnormal and normal cells is thereby increased. When the roentgen ray is used in the treatment of superficial malignancies, the same effect is obtained by dividing the dosage and applying a much greater total dose than could be safely administered in one sitting.

When treating small lesions about the face, cheeks, eyelids, neck, etc., we give a total of from 2,500 to 3,000 roentgens but with larger lesions



December 18, 1931

March 10, 1933

Fig. 4. Surgical removal would have required a very difficult plastic operation. Rapid disappearance with roentgen ray irradiation.

and those near the cartilage of the nose or ear a smaller dose is given. This is for protection of the underlying cartilage, but we have yet to see a necrosis of the cartilage even with doses up to as high as 2,700 roentgens.

Carcinomata of the lip are treated in the same way, care being used to irradiate considerable apparently normal tissue beyond the visible lesion. We find this just as important in basal cell carcinoma as in the epidermoid or mixed types, no matter where the lesion is located. Radium and roentgen ray seem to be equally effective if used with adequate dosages and either can be applied to lip lesions. We use radium somewhat more frequently here because of the ease of applying



a moulded wax plaque and because in this way the lesion can be irradiated from at least two directions by applying the radium both above and anterior to the lesion. Occasionally it can also be applied inside. When this is done, care must be taken to prevent undue reaction to the tongue or upper lip. One will sometimes see a rather large tumor involving the lip or extending into the corner of the mouth. In these cases it is best to use interstitial radium in the form of platinum needles of low radium content as advocated by Regaud. When used in connection with malignancies, radium should be highly filtered, 0.5 mm. platinum being the minimum that should be used. This insures the removal of all of the soft, caustic rays such as the beta and long gamma. Relatively low intensities are also to be preferred since this increases the differential between neoplastic and normal tissue.<sup>7</sup> Radium treatment can be supplemented by roentgen irradiation, if necessary.

In a large series of well-irradiated cases of superficial malignancy including small lip lesions one can expect primary healing in from 85 to 92 per cent of the cases. This compares well with

feel that the histologic characteristics will always give a criterion of its response to irradiation.

#### CONCLUSIONS

1. Properly applied irradiation is a satisfactory method of treatment for superficial malignancies, including carcinoma of the lip.

2. Tumors with the same histology do not all respond to the same amount of treatment, although biopsy is valuable for study.

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#### CARCINOMA OF THE BREAST\*

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With the lay journals and magazines carrying numerous articles on cancer and its various aspects, it behooves us as physicians to keep to the forefront and to lead the people along the proper paths so that by intelligent teamwork and cooperation the all too large cancer mortality may be markedly reduced. In the United States alone, over ten thousand women<sup>1</sup> die each year from cancer of the breast. This is a serious challenge to our profession and merits our united thought and effort. To know that the physicians of today are well aware of this, it is only necessary to glance through our medical journals. Several are devoted to cancer alone, the others contain monthly reports on the study and treatment of cancer in its many manifestations. The formation of special groups, diagnostic centers, and hospitals devoted to the study of this condition, all show that the profession is waging an active and unending warfare against this menace.

In the consideration of breast cancer, the first thing that comes to our minds is the diagnosis. Needless to say, this must be early. We are only too well acquainted with the textbook story of this disease, but this does not describe an early carcinoma. Because of the many articles in women's magazines, it has been said that women who notice lumps in the breast are coming to their physicians



January 15, 1932

February 12, 1932

Fig. 5. Epidermoid carcinoma. This healed rapidly under roentgen ray treatment.

what can be expected from surgery and does not have the disadvantage to the patient of what may be a considerable deformity.

In irradiating lesions about the eye, it is well to restrict the field as much as is consistent with adequate treatment and to direct the rays away from the lens, if possible. If this is not done, irradiation cataract may result. In our experience this is more likely to result from lightly filtered than from heavily filtered irradiation.

We agree with Stevens<sup>8</sup> who advocates biopsy previous to irradiation to determine the type of tumor and to study tissue response. We do not

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earlier than in former years. Granting that this is the case, the fact remains that far too many of them are holding back for weeks and months after first discovering the tumor. This may be due to the hope that it is of no consequence and will disappear in time, or to ignorance on the part of untrained individuals who will give them useless treatments of various sorts, meanwhile subjecting these people to grave risks of metastases and ultimate death because of the delay. Unfortunately, cancer of the breast in its earlier stages is not painful and the fact that there is no discomfort tends to lull their fears and postpone the visit to their physician. Signs that may be associated with cancer of the breast are as follows:

- Solitary tumor of the breast
- Bloody discharge from the nipple
- Retraction of the nipple
- Any ulceration of or near the nipple
- Puckering of the skin over one breast
- Enlarged axillary or clavicular lymph glands

Any hard irregular and solitary lump, usually painless, that gives the feeling of being fixed in the breast tissue, and that seems to have no definite line of demarcation between tumor and gland tissue should be considered as probably malignant and treated as such. The presence of a solitary cyst, superficially placed, offers little difficulty, but the same cyst placed deep in the breast tissue may present a problem in diagnosis. Frequently, these deep cysts so dominate the clinical picture that several small cysts in close proximity may be overlooked and any one of these may be the seat of an early carcinoma. Likewise, it is not uncommon for a carcinoma to arise in the wall of the larger and more prominent cysts which clinically show no signs that would lead one to suspect them of being anything but a benign tumor.

The presence of multiple lumps in one or both breasts is usually taken as good evidence of a chronic cystic mastitis. This is especially true where the masses tend to be painful, and give more discomfort during menstruation; but we must keep in mind, that it is possible to have an early carcinoma arising in association with or as a sequence to chronic mastitis.

A gumma of the breast is uncommon. It may be surrounded by an area of indurated gland tissue, have axillary adenopathy, and be clinically indistinguishable from carcinoma. A positive Wassermann reaction may show the presence of lues, but does not prove the suspected tumor to be luetic, and if there is any doubt, the tumor should be removed for diagnosis.

Tuberculosis of the breast may manifest itself as a painless, solitary lump in the occasional case. There may also be enlarged axillary glands and

even dimpling of the overlying skin with retraction of the nipple. X-ray of the chest may show a pulmonary tuberculosis, but here again any individual may have both tuberculosis and carcinoma. Deaver reports several such cases. If there is any question, the tumor should be excised for microscopic examination.

Bloody discharge from the nipple, in about one-half of the cases will be due to intraductal carcinoma; the others will, in most cases, be from intraductal papilloma and since these have a marked tendency to become malignant, they should be treated as such.

Paget's disease may arise as a carcinoma of the ducts and extend outward to the nipple and the skin, with the eczema and ulceration as secondary manifestations. This type gives rise to early metastases and rapid growth. The type which begins as a primary keratosis of the skin about the nipple with eventual scaling and ulceration results in a squamous cell carcinoma which is of a low grade of malignancy and tends to extend over a period of several years.

Carcinoma cells tend to grow along the ligaments of Cooper, and the consequent shortening brings about a slight dimpling of the skin overlying the tumor. At times, this may not be visible, but if one gently raises the skin over the suspected tumor the dimpling will become evident.

Retraction, fixation, or distortion of the nipple may occur early in carcinoma involving the ducts in close proximity to the nipple. In more distant growths, it is usually absent.

Enlargement of the axillary lymph glands may be present in benign breast tumors and all inflammatory lesions of the breast and arm. Even with a probable carcinoma of the breast, the enlarged glands may not always be the seat of metastases, although this is usually the case. The axillary glands may be markedly involved and the primary carcinoma in the breast so small as easily to be overlooked. Therefore, when one finds enlarged regional glands with no obvious cause, it is well to suspect the breast as the possible seat of a small carcinoma.

#### PROGNOSIS

Statistics on the results of treatment of cancer of the breast are on the whole unsatisfactory and difficult of proper analysis. There are so many factors, such as, type of growth, duration of the disease, age and resistance of the individual, and degree of malignancy, that enter into the problem and obscure or alter our conclusions.

Bevan<sup>2</sup> says that 75 to 80 per cent of breast cancers can be permanently cured if the disease is limited to the breast, but if the axillary glands are involved it drops to less than 10 per cent.



According to the Leeds Hospital Reports,<sup>3</sup> 90 per cent of patients with breast cancer, operated upon before glandular involvement occurred, lived at least ten years after operation.

Gottesman<sup>4</sup> reports that the average duration of life in all patients with unoperated cancer of the breast is from 3.2 to 4 years after the first discovery of the tumor.

Baumgardner<sup>1</sup> says that the average duration of life after the radical operation on the breast is about five years.

Greenhough<sup>5</sup> reports 62 per cent of patients with no lymph gland involvement living after five years and 24 per cent of patients with involved glands living after five years.

Clopton<sup>6</sup> reporting cases from the Barnes Hospital shows that of 37 cases in the breast alone, 64 per cent were alive five years later, and 27 per cent were alive ten years later. Of 89 cases with glandular involvement, 30 per cent were alive after five years, and 9 per cent were alive after ten years.

Harrington and Judd<sup>7</sup> in a large series of cases found 71 per cent living after five years, and 55 per cent living after ten years in cases limited to the breast. In the cases with glandular involvement, 26 per cent were alive after five years, and 13 per cent alive after ten years.

The degree of malignancy is often as important in determining the prognosis as is the presence or absence of axillary involvement. Greenhough<sup>5</sup> has shown that a patient with a growth of a low grade of malignancy with involved lymph nodes may live longer than one with a high degree of malignancy and no lymphatic involvement at the time of operation.

In his report he found that—

80 per cent of Grade 1 malignancy were alive after 5 years.

39 per cent of Grade 2 malignancy were alive after 5 years.

13 per cent of Grade 3 malignancy were live after 5 years.

Harrington and Judd<sup>7</sup> also found that the graduation of malignancy according to Broder's method is of valuable prognostic importance.

Certain types of breast cancer are practically hopeless from the very onset; this includes cancer in pregnant or lactating women, in the very young, and the inflammatory type of carcinoma.

#### TREATMENT

Carcinoma of the breast is, in the beginning, a strictly local disease and calls for prompt and adequate surgical removal. This means the removal of the entire breast with the underlying pectoral muscles, and the fat and lymph glands in

the axillary and subclavicular regions. Surgical methods and skill have been so improved that the radical type of operation carries a relatively low mortality, and should be used in all cases except where a simple palliative mastectomy is indicated.

The usual procedure is to dissect out the axillary contents first, then to remove the breast and underlying pectoral muscles in one mass. This diminishes the amount of bleeding, and may prevent the detachment of carcinoma cells from the primary tumor and their entrance into the lymph channels. Theoretically, it might be argued that with this method it would be possible for some cancer cells to wander through the lymph channels piercing the chest wall near the sternum and along the costal arch.

There is considerable difference of opinion as to the value of preoperative radiation. Pancoast<sup>8</sup> reports unfavorable results in a series of cases receiving such treatment and because of it, withholds judgment. If the surgeon waits to get the full results of the preoperative radiation, there is a risk of metastases occurring during the waiting interval.

There are many reports favoring postoperative radiation. In a questionnaire sent to 149 surgeons and 199 radiologists, Trout and Peterson<sup>9</sup> found that 89 per cent of the surgeons and 91 per cent of the radiologists believed that postoperative radiation was of benefit in these cases. Levin believes that adequate radiation aids greatly, but advises surgery first in all cases except ulcerating lesions and tumors firmly attached to the chest wall.

Greenhough<sup>5</sup> in studying 254 radiated cases and 120 nonradiated cases from 1917 to 1926 could find no material difference in the percentage of five-year cures. However, radiation therapy has changed much since that time, and it is generally believed that such treatment is more effective today.

In inoperable cancer and recurrent cases, radiation may give palliation and make the patient's life more bearable even if it does not appreciably prolong it.

#### SUMMARY

1. In the treatment of breast cancer early diagnosis is the most important factor and the one that must be emphasized above all others.

2. We, as physicians owe it to our patients to make an absolute and proved diagnosis in all patients coming to us with breast tumors.

3. With a localized lesion and adequate treatment it is possible to cure 75 to 80 per cent of early breast cancers. With axillary gland involve-

ment only 10 per cent or less of the patients will live five years.

4. Radical operation and postoperative radiation are the best treatment for operable cases.

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#### POSTOPERATIVE ACCIDENTS AND COMPLICATIONS\*

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If I were able to visualize for you the many methods employed in the preparation of patients for abdominal operations and the many methods used for the after-care and treatment of complications following operations that have been tried and discarded during the past thirty years, I would be accused of romancing. Yet we must remember that thirty years ago abdominal surgery was in its infancy, and many times during this period we have felt that the methods of anticipating and treating postoperative accidents and complications were becoming well standardized. However, as time marches on we have been forced to discard ideas as false conceptions that yesterday were considered truths, and replace them by newly discovered methods that appear to be more logical for the time, at least.

Realizing that it will be impossible to cover the entire field of postoperative accidents and complications pertaining to abdominal cases in the time allotted to me, I am going to discuss briefly the treatment of conditions which have caused me the most grief and worry.

Before discussing the immediate or acute postoperative complications, I would like first to discuss one condition which might be classified as a chronic complication, as it usually appears several months after the operation. This condition is postoperative hernia.

If one will take the trouble to consult any one of many operative surgical works on abdominal

surgery, he will usually find an anatomic figure illustrating the location of various incisions employed to approach various intra-abdominal organs for operative purposes. There are usually ten or twelve incisions illustrated. It is not necessary to describe these locations as they are familiar to any one interested in abdominal surgery. In my opinion only two of these incisions should be employed in routine elective abdominal surgery. I am convinced that 98 per cent of abdominal surgery may be done through these two incisions and they are the only ones that do not invite postoperative hernia, because they do not require extensive nerve injury and resultant trophic disturbance to the muscles of the abdominal wall. The two incisions I have reference to are the lateral medium rectus incision and the muscle splitting flank incision. It requires more time to make these incisions and it requires more skill and patience to work through them than many other incisions that do not take nerve destruction into consideration, but it is time and effort well spent. By a lateral medium rectus incision I mean a skin incision one and one-half inches to the side of the medium line through the anterior fascial covering of the rectus muscle, retracting the rectus muscle laterally until it is in line with the skin incision and then opening the posterior rectus sheath and peritoneum. To inspect the lateral locations of the abdomen it is then necessary only to extend the length of the original incision, and lateral traction is facilitated with ease. This is the only incision I have employed in years for gall-bladder, liver, stomach, duodenal, spleen, pancreas or pelvic surgery, and I have never had a postoperative hernia.

In operating on the appendix I am convinced that more than 95 per cent of appendices can be removed through a grid-iron muscle splitting incision and in this incision as well as in the lateral medium incision there is no occasion to traumatize the nerve supply to any muscle. In using the grid-iron incision to remove the appendix if I find that I do not have ample room to deliver the appendix or that I have made my approach either too high or too low I simply extend the external oblique incision up or down as the case requires and make a second opening through the internal oblique by separating the muscles in the direction of its fibers, thereby avoiding the nerve supply to the muscle. Then, with two openings to work through, the operation is usually easy. If it is necessary to institute drainage, I employ whichever opening appears most suitable and close the other opening. If the two above mentioned incisions are employed postoperative hernia will seldom occur.

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How about hernia occurring after drainage? To prevent hernia at this location it is necessary only to keep the wound packed thoroughly with gauze until the scar tissue closes in and it is impossible to place any more packing in the wound. Another factor inducive to postoperative hernia is improper closure of the abdominal wound. It is my opinion that all abdominal wounds should be closed layer by layer and that retention sutures of non-absorbable material should be used. These retention sutures should include the deep fascia but not the muscle, thereby eliminating all dead spaces inviting the collection of serum and wound abscess. The early recognition of subcutaneous abscess and early drainage of it will preserve the abdominal wall, providing the abscess cavity is thoroughly packed with gauze until it is completely filled with scar tissue.

Early and continued exercise of the abdominal muscles is one of the essentials in strengthening the abdominal wall. By exercise I mean deep breathing, using the abdominal muscles as much as possible. This exercise should be instituted the second or third postoperative day and continued daily for several weeks. The early exercise of the abdominal muscles reestablishes the disturbed circulation from the trauma of the incision and retraction at the time of the operation. This early exercise also prevents adhesions of the abdominal wall to the underlying organs.

Another essential agent in preserving the useful integrity of the abdominal wall is a suitable adhesive support to the wound which should be worn for several weeks after the operation. If the above mentioned factors of treatment of the abdominal walls are observed I am convinced that the postoperative hernias in primary incisions will be reduced to less than two per cent; and I am sure, if it were possible at the end of the third postoperative year to tabulate all the cases of postoperative hernia and weakened, sagging abdominal walls, in the country, the condition at the present time would be near 30 per cent.

Let us consider pulmonary complications. Here again prevention is the cue to the situation. Before the patient leaves the operating table all perspiration should be removed from the body surface and a thick cotton pneumonia jacket should be applied. Since I have followed this routine I have not had a single case of postoperative pneumonia except of an infectious nature which could be accounted for from infections of the mouth or accessory sinuses. The postoperative room should be well ventilated but the air should be kept warm; by that I mean a temperature of 74 to 76 degrees should be maintained; the position of the patient

should be changed frequently and there should be an early elevation of head and shoulders.

If bronchitis or even bronchial pneumonia should develop, the best treatment I have found is the administration of guaiacol by inunction using camphorated oil as a vehicle. The average dose for a person weighing 150 pounds is seven to ten minims in a dram of camphorated oil applied by thorough massage over the chest every two hours. Guaiacol is an antipyretic, a sedative, liquefying expectorant and diaphoretic, and the administration of it by inunction does not disturb the stomach as drugs by oral administration usually do. If bronchitis is accompanied by a cough the hypodermic administration, q. s., of codeine sulphate will control the situation. With the above form of treatment signs of improvement will be observed in six to ten hours and the pulmonary complications usually disappear by the end of forty-eight or seventy-two hours. The pneumonia jacket is usually removed on the fourth or fifth day, sometimes earlier if there is no evidence of pulmonary complications.

One of the most common postoperative complications is the presence of "gas pains." Here again it is my conviction that prevention is the important factor in controlling this condition. The only bowel preparation that I use before an operation is a simple normal saline enema given preferably twelve hours before the operation. If the operation is an emergency the enema is dispensed with. As soon as the patient is returned to bed a couple of ice bags are applied to the abdomen and are used fairly constantly for the first three or four postoperative days. The applications of ice arrest peristalsis, seem to prevent the formation of gas, and control the effect of postoperative temperature. No laxatives are used during the first postoperative week and very rarely during the second week. The colon tube is used frequently, and on the third or fourth postoperative day the colon is washed out with a normal saline enema. Sufficient amounts of opiates or nerve sedatives are administered to keep the patient comfortable. Since using the above form of treatment I rarely have a patient who complains of gas pains.

The most successful treatment I have found for an acute dilatation of the stomach is as follows: thorough lavage of the stomach with a solution of bicarbonate of soda, usually repeated every hour or two for three or four times; the application of a large sinapism, strength one to four applied over the epigastric area, this to be repeated every hour for three or four applications; large doses of strychnine every three hours; and one or two doses of pituitrin, one c.c. each; withholding all

fluids by the mouth, supplying them subcutaneously and intravenously; also the intravenous use of sugar.

Another trying postoperative complication is paralytic ileus, the symptoms of which are familiar to all of you. The best treatment I have found is decompression of the intestines by the duodenal tube when possible, but it has been my experience that when the condition is very severe this method will not produce the desired results. When it fails I use enterostomy, and here I want to offer some words of support to the use of enterostomy. I realize that many surgeons condemn the enterostomy tube, but I believe this is because they lack experience with the method. First, in a case of paralytic ileus it is necessary to place an enterostomy tube at both ends of the paralyzed bowel and if this does not cause a collapse of the bowel it is necessary to place in more tubes until it is completely collapsed. When the tubes are in place there should be some mark of identification as to the probable location of each tube in the bowel. This is especially true of the one that is at the distal end of the paralysis, since it is through this tube that nourishment may be introduced to sustain the patient until the paralyzed bowel recovers its normal tone. I have placed as many as six tubes in the paralyzed bowel at one time, and have usually been able to keep the bowel collapsed by frequent injections of warm normal saline solutions. I have never had a patient with a permanent fistula, nor have I ever had to close a fistula.

There is one other condition which I wish to mention and that is postoperative toxicosis. I have seen this condition described in print only once; it was a brief article from the Mayo Clinic. The symptoms are practically the same as an acute thyrotoxicosis; namely, marked increase in pulse rate, high temperature, and a nervous and restless state of the patient. Unless promptly treated, early death may result, and I have not discovered a way to anticipate the condition. When metabolic reading became practical I thought we would be able to detect the condition by this test, but I have seen it occur in a number of patients who had a normal metabolic rate, normal blood count, normal blood pressure and normal urinalysis; so I know of no way to anticipate it except that it seems prone to occur in certain types of individuals; namely, rather stout plethoric females who have intramuscular fibroids of the uterus. The symptoms usually appear five or six hours after operation, the temperature going as high as 104 or 105 degrees, the pulse, a full bounding pulse as high as 160 or 180, the patient is extremely restless and as stated be-

fore, succumbs in a short time to what has often been termed shock, but which is not a true postoperative shock since it will not respond to the treatment which usually relieves shock. The following treatment has never failed me: first, a large dose of chloral hydrate, ten or twenty grains for a patient of 150 pounds, is given hypodermatically and repeated in three or four hours if restlessness persists; fifteen grains of sodium iodide given intravenously every eight or twelve hours until four or five doses are given; the intravenous use of sugar every twelve hours until the symptoms have subsided; and the application of ice bags to the head and precordial regions. The barbitol preparation may control the nervousness, but I employed chloral hydrate hypodermatically before the barbitol group became popular, and my experience has been that chloral is a more constant and less depressive sedative than the barbitol group.

#### SUMMARY

1. Postoperative hernia will not occur if proper incisions are made guarding the nerve supply to the muscles, nor will it occur in drainage cases if the wound is properly packed.

2. Early exercise of the abdominal muscles and the wearing of the proper adhesive supports are essential in retaining a normal abdominal wall.

3. Pulmonary Complications: The patient should be protected with a pneumonia jacket. The use of guaiacol inunction to liquefy bronchial secretions, control temperature and quiet the nerves is recommended.

4. Gas Pains: Simple preparation of the gastrointestinal tract, and the use of ice bags is very essential to control pain, and to prevent peristalsis and the formation of gas. The colon tube should be used early, and the enema on the third or fourth postoperative day.

5. Acute Dilatation of the Stomach: The following course is recommended: use of lavage, withholding of fluids, judicious use of pituitrin, contra-irritant over the epigastrium by the frequent use of sinapisms, supplying the body fluids by intravenous and subcutaneous methods.

6. Paralytic Ileus: Decompression of the paralyzed bowel should be accomplished by the use of the duodenal and enterostomy tube, and by feeding through the enterostomy tube.

7. Postoperative Toxicosis: Prompt treatment by chloral hydrate given subcutaneously as a sedative, and sodium iodide and glucose given intravenously gives best results.



## ROENTGEN RAY CONSIDERATIONS IN INJURY CASES\*

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In presenting this subject for your consideration it is not our intention to go into technical details, as that would be of little interest to the general practitioner, but rather, through the emphasis of some things we have observed in our x-ray work in connection with injuries, to bring to your attention the value of roentgenology in the management of these cases and to promulgate a more general application of its use. If we can make some suggestions that will be mutually helpful to the general practitioner or surgeon, and to the roentgenologist, as well as to enure to the benefit of the patient, we will have accomplished our purpose.

Notwithstanding the fact that industrial institutions generally have been stressing the "safety first" program, and by the installation of safety devices and other means have materially reduced the number of accidents in industrial work, still the number of accident cases the medical fraternity is called upon to treat has increased many fold. Not only is this true—but the great increase in automobile traffic, together with higher speed cars and increased use of trucks and busses made possible by our improved highway systems, has diverted a large part of the accidents from the industrial centers to the rural districts, so that the physician practicing in a small community, who previously saw only a few injury cases, now finds them thrust upon him, whether he will or not, and he must be prepared to render service.

When Roentgen in 1895 made a radiograph of his hand he gave to the medical profession an impetus—the development of which has ranked with the perfection of the microscope in point of usefulness in diagnosis. Since a roentgenogram is only a recorded shadow of the substances through which the rays have passed, it differentiates tissues only as their densities differ. For this reason the diagnosis of the soft tissue injuries, by means of the x-ray, leaves much to be desired. However, with the present standard of x-ray technic, the use of dyes, x-ray opaque solutions, etc., much valuable information is obtainable.

Perhaps one of the most important x-ray accomplishments, in soft tissue injuries is the diagnosis of gas bacillus infection. As early as 1915, Woodburn Morrison found that he was able to diagnose this infection with the x-ray long before it was recognizable clinically. It is now a well known and established fact that the earliest possible means of diagnosing the infection is by the x-ray. Long before it is possible to detect crepitus of the gas

in the tissues a radiograph will show the small, round, oval, or irregular dark shadows, characteristic of gas or air in the tissues. These at first appear in close proximity to the wound and are few in number, but as the infection develops the shadows increase in size and distribution and may appear as dark sheets between muscles, or subcutaneously, or in the fascial planes. When the ray strikes these collections transversely the shadow appears as a thin streak on the film, or later a gas phlegmon may form with its characteristic shadow. Early there may be some uncertainty as to diagnosis because of the fact that air may have been introduced at the time of the injury, or possibly there may be collections of oxygen due to the application of hydrogen peroxide to the wound. However, these collections will soon be absorbed and if shadows are present as late as ten hours after the injury, it is very suggestive of a gas infection, and if a second radiograph a few hours later shows an increase of the shadows the diagnosis is certain. Recently the x-ray has been employed as a therapeutic means of combating this infection. Reports seem to indicate that it is of considerable benefit in connection with serum and other lines of treatment, but so few cases have been reported as yet that no definite conclusions can be drawn.

In non-penetrating wounds of the abdomen every surgeon realizes the extreme difficulty of an early discrimination between trivial injuries and those of a serious nature, including perforation of the stomach or intestine, or rupture of the liver, spleen, kidney or bladder. He also realizes that where an operation is necessary the matter of a few hours delay is often disastrous. When perforation is present the x-ray offers a distinct help in an early diagnosis.

Vaughn and Singer, in a study of a large number of acute abdominal conditions, observed several cases of pneumoperitoneum following blunt trauma to the abdominal wall, as well as in gunshot wounds. As early as 1916 Lenk, a military surgeon, emphasized the significance of intraperitoneal free air in the diagnosis of gunshot wounds of the abdomen.

Almost without exception every acute condition with free gas bubbles in the abdomen, or a gas shadow between the liver and the diaphragm (if patient is erect), indicates a perforation or a rupture of a gas-containing viscus. This is easily detected by the x-ray, either with the fluoroscope or a radiograph, and is usually obtainable within an hour after the injury; hence when this sign is present it may be of life-saving importance.

As an aid in the diagnosis of injuries to the liver and spleen, the intravenous injection of

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thorium dioxide solution (thoratrast) has been used in a few cases with apparent success. Some information regarding injury to the kidneys or bladder may be obtained by the intravenous injection of neo-iopax, or in case of the bladder, the simple injection of air. Retrograde pyelography is usually not advisable in kidney injuries, but if it were it frequently could not be used because of bloody urine and inability to introduce the ureteral catheter.

Experimentally, the injection of air or gas, or some opaque solution into joint cavities, has given some valuable information regarding injury and disease of cartilages, but with the present technic the possibility of injury to the joint hardly justifies the procedure.

The x-ray is useful in detecting and locating foreign bodies, and as an aid in their removal. As applied to the eye, this was one of the first developments in clinical roentgenography. The first recorded case is said to have been reported June 5, 1896, by Doctors Frances H. and Charles H. Williams of Boston. It is especially applicable in those injuries where the usually transparent fluids and tissues of the eye are rendered opaque to ordinary light, so that the ophthalmoscope is useless.

We must acknowledge our regret at not being able to visualize x-ray transparent objects. In suitable cases the injection of opaque solutions or air into the tract of entrance may offer some assistance.

From the very beginning of the x-ray its usefulness in the study of bone conditions has been paramount. In 1896 within six months after its discovery, it had been used in the diagnosis of fractures and dislocations with surprising success considering the apparatus available at that time. In the management of accident cases in which there is a possibility of the presence of a fracture or bone injury, an x-ray examination is a procedure of primary importance and will nearly always give accurate information, with details that cannot be obtained in any other way. It is necessary, however, to remember that the x-ray is not infallible, and unless the examination is made with care and close attention to details and interpreted with judgment based on study and experience, coupled with a consideration of the clinical findings, wrong conclusions may result.

A good radiograph must be clear with the bony outlines well defined, and there must be at least two views taken from opposite directions. If this is impossible a stereoscopic examination should be made. A poor film may show a fracture, but to demonstrate the absence of injury demands the best films, and more of them, frequently stereo-

scopic and possibly of the opposite side for comparison. A clear statement of negative findings by a competent roentgenologist often requires courage, honesty, and a liberal supply of self-confidence.

In referring a case for examination, give the roentgenologist a full history of the case. It is his function to make a diagnosis and not simply to take a picture, and to do so he is entitled to and frequently needs all of the clinical facts available. He should be given a free hand to conduct the x-ray examination as his judgment indicates is best. Too frequently he is asked to make a fluoroscopic examination of an injury, for instance, to ascertain whether or not there is a fracture, and the irony of it is, that nearly all of these requests come in connection with cases in which the clinical diagnosis is questionable and the x-ray hardest to make. The fluoroscope is an indispensable adjunct in the adjustment of fractures or in the removal of foreign bodies, but it is usually inadequate for a satisfactory diagnosis of bone injuries or diseases. Many physicians do not realize this fact.

If possible radiographs should be taken before and after adjustment of fractures and at reasonable intervals during the process of repair. They are especially applicable in the follow-up examinations since they can be taken without removing the splints or other retention apparatus. They are useful as a check on conditions and results, and a wonderful protection in defense of malpractice suits. One of the largest companies writing physicians' liability insurance has sent out the following warning:

"The importance of x-ray in the diagnosis of any possible bone injury, and before and after reduction of a fracture, cannot be overestimated. It is becoming increasingly difficult to defend successfully any such cases without full x-ray records."

Where an x-ray is available, preliminary attempts to make a detailed clinical diagnosis of a fracture are not advisable, for the manipulations necessary are not only quite inaccurate, but they are painful, and are capable of doing considerable harm, both by adding trauma to the tissues already damaged and sometimes by causing needless displacement of the bone fragments, which previously were in good position, or possibly a desirable impaction may inadvertently be released.

The roentgenologist must not only be able to recognize the usual bone conditions but he must be familiar with the unusual ones as well, for there are many of these which are misleading unless their true significance is recognized. Among them may be mentioned anatomic variations in epiphyseal development.



There are a number of anomalies of the bones, of the ankle, and of the wrist which may be mistaken for injuries—supernumerary bones or the fusion of two or more bones, or sesamoid bones in unusual locations. A divided scaphoid is not infrequently found and may be mistaken for a recent injury. The condition probably resulted from a previous fracture which did not unite. Non-traumatic fragmentation of the patella occurs. A congenital deformity of the acromioclavicular joint has been mistaken for an injury, and in more than one instance damages have been awarded by a jury.

The finding of a congenital deformity after an accident does not necessarily prove the absence of an injury, however; there may be both. The key to these abnormalities lies in the fact that they are almost invariably bilateral; hence, the need of an examination of the uninjured side for comparison. Especially is this important in cases involved in legal proceedings.

The prognosis of fracture from an x-ray point of view deserves some consideration. In fractures of long bones and those of the pelvis, we know that 100 per cent functional results are often obtained even though the radiograph shows considerable overlapping and disalignment of fragments. This should teach us not to be too persistent in our efforts to obtain perfect x-ray results, for by so doing we may be led to advise an open operation with its additional risks, when from the standpoint of functional results, it is not necessary. We know that fair apposition of fragments usually results in firm union. On the other hand we must not be too optimistic in our prognosis of fractures, based solely on the obtaining of perfect x-ray results. The soft tissue equation is always an important and uncertain one, and especially in fractures near or involving joints, do we sometimes see bad deformities and imperfect functional results, due to excessive callous formation, proliferation of cartilages or ligaments, or to involvement of nerves, tendons, or blood vessels, in spite of the fact that there is perfect apposition and alignment of bone fragments as shown by the x-ray.

The following suggestions may be helpful:

1. Do not overlook the presence of bone disease and pathologic fractures in the diagnosis and prognosis of injuries. Some fractures may be overlooked because the line of cleavage or deformity can be demonstrated in one plane only. In a series of 1,035 fractures encountered in the United States Marine Hospital in San Francisco, 3.5 per cent were recorded as being shown in a single view only, notwithstanding the fact that the examination included three or four views of each.

2. Injuries of the epiphysis may be easily over-

looked unless the films are carefully studied, and they sometimes carry a bad prognosis because of an arrested bone growth which may result.

3. In the examination of the extremities use large films, because frequently there may be an injury higher or lower than the area suspected.

4. In apparent dislocations of the shoulder or hip take radiographs before attempting a reduction, because frequently there is a fracture as well as a dislocation, or possibly a fracture and no dislocation, and unless this is known, much damage may be done in attempts at reduction.

5. The study of callous formation in the repair of fractures is important. In injuries of the cranium (excepting depressed fracture) and those of the pelvis, the important consideration is not so much the amount of bone pathology as the recognition of injuries to the contained viscera.

6. The x-ray is important in head injuries, but the clinical considerations should come first. Do not subject the patient to x-ray examinations when or if there is any probability of increasing the damage already done to the brain, except in cases of the most urgent necessity.

There are many other important considerations in connection with this subject but time does not permit of their discussion. In conclusion allow me to suggest a more general use of the x-ray as an aid in the diagnosis and treatment of injuries, and a closer cooperation between the general practitioner and surgeon, and the roentgenologist, not only in the interest of the patient but as a help and a protection to the doctors as well.

#### METHODS OF TREATMENT IN MALPOSITIONS OF THE UTERUS\*

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When it is recalled that 127 operations or modifications of these procedures have been published for the correction of uterine malpositions one may know that there is no uniformity of opinion regarding treatment of this condition. Curtis, in commenting on the frequency of uterine displacement, says that at least one woman out of every half dozen has a uterus which is definitely out of its natural position. The uterus is a freely movable organ in its normal state, and is therefore heir to many positional changes resulting from congenital anomalies, from infections, and lastly and most frequently, repeated insults from the trauma of childbirth.

The most truly congenital malposition is that of antelexion, wherein the body of the uterus is bent sharply forward on the cervix. This anomaly is not common and is considered due chiefly

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to a developmental defect. The most common complaint is a persistent sterility. The method of treatment is repeated careful dilatations in the hope that the kinking of the canal may be ironed out and made patent for the later reception of the sperm.

The retrodisplacements are more frequent and include retroflexion, the bending back of the body on the cervix, directly opposite to antelexion; retroversion, the turning backward of the uterus as a whole, in its relation to the axis of the pelvis; and retrocession, or a backward sagging of the organ.

Presupposing that the diagnosis is correct, the aim of treatment should be the permanent elimination of symptoms by a method which assures the greatest safety to the patient. Methods of procedure will be considered later; however, an important consideration is that the causative lesion be kept foremost in mind rather than the retrodisplacement itself.

The human anatomy with its wide range of variability will not allow for standardization. Disregard for this fact accounts, in part, for many failures of cure since some zealous operators have attempted to use one method routinely. Their failures have only sponsored newer and different variations of treatment, again with some cures and some failures. Since the bulk of our surgery in uterine malposition has to do with the correction of that condition commonly called prolapse, we shall try to evaluate a rational procedure in its treatment.

Baer and Reis state that "The gynecologist confronted with the problem of curing a patient afflicted with prolapse of the uterus is influenced by three factors in his choice of operation: first, by the limitations and conditions in the given patient; second, by his familiarity and previous success with particular types of operations; and third, by his desire to improve his results through the utilization of other methods."

These statements are general and merit further subdivision. We must decide these questions concerning the patient. Is she in the child bearing age? Is there evidence of other genital disease? How much surgery will her general physical condition permit? Is there a possibility of malignancy present? Lastly, what is the possibility that these symptoms exist from an orthopedic or neurologic condition rather than from the existing prolapse? The second postulate of these authors needs amplification. Many surgeons have been trained by men who were wedded to one established operative method. In using this technic they have become facile and the majority of patients thus treated have obtained satisfactory re-

sults. However, the general surgeon in our average city does not have sufficient gynecologic work to enable him to evaluate through trial (and oft-times error) the method best suited to his skill. He therefore continues to use routinely the one procedure with which he is acquainted. The third statement constitutes a challenge toward the evaluation of the progressive surgeon. A careful study of the patient coupled with the application of the method best suited to that individual will make for the greatest satisfaction to patient and surgeon.

Surgery is not required in every case of retrodisplacement and in many cases, when indicated, the patient refuses to submit to an operation. We must therefore have an understanding of non-surgical treatment. In the young woman, manual reposition frequently replaces the retrodisplacement. This maneuver, followed by education in the use of the knee-chest position and proper exercises, frequently allows the pelvis to reestablish its own support. Again, the proper use of the pessary must be mentioned. A well fitted pessary will often verify a diagnosis of prolapse when a question has arisen regarding the etiology of the presenting symptoms. The relief obtained from the pessary will prove to the surgeon that operative repair will make permanent the relief that has been secured temporarily through the use of the pessary. Previous articles have stressed the untoward results from prolonged use of pessaries, and it is again emphasized that their use should be but a temporary measure.

In operative procedures, a point of controversy has developed questioning the preference of the vaginal route to the abdominal approach in the repair of the existing pathology. A further question has arisen as to whether the uterus should be sacrificed or maintained, even if the menopause has been reached. Crossen has answered the question of approach rather well when he states that the abdomen should be opened when there is other surgical work required in addition to the restoration of the prolapsed condition. He would prefer some of the vaginal restorations in the purely prolapsed conditions. The general surgeon, however, is more familiar with the abdomen than with the more detailed anatomy of a perineum which may be markedly distorted, depending on the type and degree of prolapse. It must be borne in mind that a repair of a prolapsed condition should be one of reconstruction rather than fixation. A pelvis with its contents firmly and immovably anchored may be far more distressing than the original symptoms before operation. In the childbearing age especially is this fact pertinent. To go into detail regarding operative tech-



nic would be superfluous since the literature is most complete concerning these common procedures.

In the correction of retrodisplacements and the moderate prolapses, three operations stand out as being those most frequently used. Each has merit attested by the results obtained; each, in turn, may be subjected to criticism.

The Olshausen operation, one of the oldest, is relatively simple and, if speed and a minimum of trauma are to be desired, this technic should be considered. The round ligament on either side is sutured to the abdominal wall through the peritoneum, muscle and fascia, and the knot tightly tied within the abdomen near the ligament. The objection that a persistent sinus caused by infection along the suture tract may exist has been eradicated by substituting absorbable suture material for the silk recommended by Olshausen. The round ligaments and the adjacent peritoneal surface are scarified prior to suture to produce better fixation. Other objections, however, such as pelvic adhesions and the possibility of recurrence, militate against this operation.

The Baldy-Webster operation is perhaps the most frequent type of abdominal operation. Its main purpose is to hold the uterus in position by uniting the round ligaments on the posterior uterine wall after they have been threaded through apertures in the broad ligament. The original operation had several drawbacks, among them recurrence following pregnancy, adhesions between the newly-placed ligaments and omentum or small bowel, and possible herniation through the rent in the broad ligament. Several modifications and amendments have been published which minimize to some extent these objections. Webster first suggested closing the aperture in the broad ligament as soon as the round ligament was in place. The sagging can be somewhat controlled by a careful placing of the ligaments on the posterior uterine wall and then transfixing them by a fan-shaped spread that more tissue may be in apposition. Curtis further places interrupted sutures through the uterosacral ligaments where diastasis usually exists, and likewise reefs the broad ligaments in the same locality. These two measures are a further aid in maintaining support.

The third commonly used procedure is the Gilliam suspension. This occupies an intermediary position between the Olshausen and the Baldy-Webster operations; while the round ligaments are again used for the supporting structure they are brought outside the abdominal cavity and transfixed to the overlying fascia. The possibility of an intestinal loop being caught in the space between the transfixed ligament and the abdominal

wall must be borne in mind. Simpson's modification of bringing the ligaments through the peritoneum at the inguinal ring obviates this objection to a large extent.

The Alexander-Adams operation, although rarely used now, was popular in past years when opening the abdomen was attended by considerable risk. In this operation bilateral incisions were made above Poupart's ligament along the inguinal canal. A forceps was then thrust through the ring on either side and the round ligament grasped, pulled through, and sutured to the overlying fascia. This produced a substantial support but allowed for no inspection of the uterus and adnexa, consequently pathologic conditions here existent passed unnoted.

The above described procedures are applicable to women in the childbearing age. Following the menopause the main function of the uterus has ceased and its retention is therefore not so essential, although it has recently been stated that the endometrium may have some secretory function even after the childbearing period has ended. Several procedures have been described whereby the fundus has been sutured to the abdominal wall. One of the most interesting and practical of these is a technic wherein a V shaped portion is removed from the fundus. The remaining portions of the fundus on either side are enveloped in their serosal covering, brought outside the peritoneum, and threaded into the fascia of the rectus muscles. This obviates to some extent the untoward features of a ventral fixation, namely recurrence and the frequency of ventral hernia. It does, however, produce a rigid fixity to the pelvic content which is often as discomforting as the original complaint. Supracervical hysterectomy with ventral suspension of the stump offers the same objection and likewise makes little provision for the accompanying bladder prolapse.

Many operators discredit the abdominal approach with the claim that since prolapse is in essence a herniation through a defective pelvic floor, only a vaginal approach will allow for a proper reconstruction. Surgeons in this country are only recently becoming attracted to the Fothergill operation which is used with such a high percentage of success in England. In this technic a V shaped section of vaginal mucosa is removed from the anterior vaginal wall, with its apex about one-half inch below the urethral opening. Interrupted sutures then bring together the fascia from either side and while the uterus is pushed up into position, the sutures are tied and the accompanying cystocele resumes a firm bed. As in all vaginal operations a perineorrhaphy concludes the procedure.

The Watkins-Wertheim operation, or as it is more commonly called, the interposition operation, calls for a very meticulous technic. It aims to place the uterus in a fixed position of ante flexion with the bladder resting on its posterior surface. It produces a strong support but in the event of a later developing carcinomatous change in the uterus, that organ is almost inaccessible. Likewise serious bladder complications develop unless the position attained is perfect. It is not an operation for the occasional operator to attempt.

The Mayo vaginal hysterectomy is the ideal operation for complete prolapsus. With a good approximation of the broad ligaments, a strong pelvic floor is reestablished and the fear of degenerative uterine changes are removed with the removal of the organ. This operation, however, calls for a careful technic which, failing, allows for subsequent hemorrhage if the broad ligaments are not secured, or a recurrence, or even aggravation of the cystocele if the reconstruction of the pelvic floor is not adequate. The Le Fort operation of obliteration of the vagina by approximation of the vaginal walls is useful in older women.

In the correction of uterine malpositions, especially retrodisplacements and prolapse, many procedures are offered which have proved efficient. It remains for the surgeon so to equip himself that he may have the versatility to use the technic of greatest value to the patient.

#### CONCLUSION

1. The treatment of malpositions of the uterus has been confused by a complexity of procedures.
2. A well fitted pessary is frequently of value as a temporary measure but its continued use should be discouraged because of the danger of irritation and subsequent malignancy.
3. A fixity of pelvic content is undesirable and any procedure which produces this condition is to be avoided.
4. In the simple displacements during the child-bearing period the modified Baldy-Webster technic and the Simpson modification of the Gilliam operation seem adequate.
5. The vaginal approach allows for a more complete restoration of the perineum, but the use of the interposition operation or the Mayo procedure depends on the skill of the operator. The Fothergill technic deserves trial because of its simplicity.
6. The surgeon engaged in gynecologic work should familiarize himself with these methods of treatment, that he may have a higher percentage of satisfactory results by applying the proper operation to the individual case.

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#### ROCKY MOUNTAIN SPOTTED FEVER IN IOWA\*

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With the name assigned to it, who would have thought until recently that Rocky Mountain spotted fever was to become a matter of concern, not alone to the people of Iowa, but to states as far east as the Atlantic seaboard!

#### HISTORY

Howard Taylor Ricketts, M.D., in a lecture given before the New York Academy of Medicine in 1909, stated that Indians, older physicians and residents in the Bitter Root Valley of western Montana, were familiar with this strange and dreaded malady. It was hard to trace the disease further back than the early eighties. Deaths occurring among Indians who frequented certain mountain canyons during the spring and early summer months, were attributed to evil spirits. Among the early investigators who went to the Bitter Root Valley to fathom the mystery of this disease, were L. B. Wilson and W. M. Chowning, physicians of the University of Minnesota. These men concluded that the disease was transmitted to man by the wood tick, which in turn acquired infection from certain rodents. It was Dr. Ricketts who in 1906 and 1907, through ingenious ex-

\*Read at the Eighth Annual Meeting, Iowa Public Health Association, Des Moines, November 22, 1933.



periments upon animals at Missoula, Montana, made some of the most notable contributions to the knowledge of Rocky Mountain spotted fever. He demonstrated that the disease was spread by infected wood ticks, and he made a careful study of the life history of the wood tick. He showed that the germ or virus which caused the disease, was transmitted through heredity from the infected female to the eggs and through the various stages to adult ticks. Dr. Ricketts later went to Mexico to study a virulent type of typhus fever, a disease similar in many respects to Rocky Mountain spotted fever. He died in Mexico in 1910, sacrificing his life for science and humanity.

Since that time many with special training in the field of medicine or entomology have devoted years of painstaking research to the study of Rocky Mountain spotted fever, of the transmitting agent, the wood tick, and of means of cure or prevention of the disease. During this period, five workers "gave their lives in heroic manner through accidental infection." As a result of experiments conducted from 1922 to 1928 by R. R. Spencer, M.D., surgeon, and R. R. Parker, Ph.D., special expert of the United States Public Health Service, a vaccine has been discovered which is of great value in conferring immunity against the disease. Since the use of this vaccine only one death has occurred, although eleven laboratory workers have suffered accidental infection with the most fatal form of disease.

#### GEOGRAPHIC DISTRIBUTION

In 1909, Dr. Ricketts, speaking of the occurrence of this disease, mentioned portions of six states in addition to Montana, namely Idaho, Wyoming, Utah, Colorado, Nevada and Oregon. Since that time the area from which the disease has been reported has gradually increased and now includes thirteen of the Rocky Mountain states. Beginning in 1930 and continuing to the present year a surprising development has taken place, in that cases of illness, apparently identical with Rocky Mountain spotted fever have occurred in nearly a score of states in the eastern, southern and midwestern sections of this country. Missouri and Minnesota were added to the list in 1932.

#### CASES IN IOWA

During 1933, five cases of Rocky Mountain spotted fever were reported in Iowa.

In 1931, a probable case of this disease occurred in Adair county. The attending physician, J. B. Stoll, M.D., then of Fontanelle, corresponded with Dr. Parker at Hamilton, Montana, and forwarded a blood specimen of the patient. Laboratory tests, as reported by Dr. Parker pointed to spotted fever, rather than typhus fever.

The first case of Rocky Mountain spotted fever in Iowa was reported as such to the State Department of Health by C. N. Freligh, M.D., of Waucoma, Fayette county, on June 13, 1933. An interesting circumstance was a factor in determining the diagnosis in this case. Dr. Freligh heard Drs. Wilson and Chowning discuss Rocky Mountain spotted fever in Minneapolis, on their return from a study of this disease in 1903. It seems remarkable that the information gained thirty years ago should have been called to mind in revealing the nature of this patient's illness.

L. M., a farmer, forty years of age, complained of malaise and loss of weight for a number of days prior to June 5. On this day, onset of the acute attack occurred with a severe chill while the patient was working in the field. Headache and vomiting followed. He was seen at this time by Dr. Freligh, the attending physician. On the third day a macular rash appeared, most profuse about the ankles, wrists and forehead. The eruption spread to the body, becoming generalized after three or four days. On June 12, the patient was drowsy and complained of neck stiffness. There was but little soreness of the throat and a slight cough. The temperature reached 103 degrees and the pulse was moderately accelerated. When seen with Dr. Freligh on June 15 and 16, the patient was drowsy and responded slowly to questions. Reflexes were hyperactive, Kernig's sign was present, the neck was fairly rigid and a definite ankle clonus was elicited on both sides. Together with these nervous manifestations, the most striking thing was the character of the eruption, which covered the entire body and extremities. The spots were irregular in outline, of a brownish color and varied from pin-head to pea-sized. After an illness of three weeks, the patient's temperature returned to normal, and with it a good appetite. The rash on the arms and legs had faded but the thighs and body presented, to quote the words of the attending physician, "a galaxy of brown spots." The farm of L. M. has on it some heavily wooded timber and is at the edge of the rugged, hilly section of northeastern Iowa. The patient had not been away from home during the weeks preceding the illness. He had no recollection of removing any ticks from his body during the days before onset of symptoms. Several dogs were on the farm, and a number of wood ticks were found on these animals. A specimen of blood from the patient, forwarded to the State Hygienic Laboratories at Iowa City a week after onset of illness, showed no definite reaction. A second blood specimen, however, taken eleven days after the acute onset of symptoms, yielded a positive report, the result being verified by the laboratory of the

National Institute of Health in Washington, D. C. This blood test, known as the Weil-Felix reaction, is an agglutination test similar to that for typhoid fever. The so-called "protection test," carried out later at Hamilton, Montana, on a blood specimen from this patient, confirmed the diagnosis.

Strangely enough, a second case of this disease occurred almost simultaneously with the first, in southeastern Iowa. The patient, L. P., a little girl, seventeen months of age, became sick suddenly on June 6 on a farm in Louisa county. The attending physician was F. A. Hubbard, M.D., of Columbus Junction. W. L. Alcorn, M.D., of Washington, saw the child in consultation. The patient was admitted to the Children's Hospital in Iowa City, June 11, 1933. Reddish spots pin-point to pin-head in size, covered the entire body. Temperature reached 103.8 degrees. The disease terminated fatally one week after admission to the hospital. A diagnosis of Rocky Mountain spotted fever was made by G. H. Hansmann, M.D., of the department of pathology, through a microscopic examination of the skin. The Weil-Felix agglutination test of the blood, carried out in the State Hygienic Laboratories by I. H. Borts, M.D., was also positive. A visit was made to the home of this patient in Louisa county some days later. The father stated that the family had not been away from home prior to the illness. No ticks had been removed from the child's body during the days before illness, but the father suggested that she might have been exposed while playing in the grass.

The third patient, R. R., six years of age, became sick June 30, 1933, while visiting on a farm in Allamakee county, in the extreme northeastern part of Iowa. The attending physician was C. W. Rominger, M.D., of Waukon. Illness began with headache, vomiting and high fever. The child was very drowsy and irritable. After several days a measles-like eruption appeared on the body, being profuse in the palms and on the forearms. A number of children in the community had been sick with measles. The manner in which the rash persisted in this case, led the physician to suspect Rocky Mountain spotted fever. Diagnosis was confirmed on July 12 and 15 by strongly positive blood tests, and later on by the protection test. When seen with Dr. Rominger, on July 14, two weeks after the onset of illness, the eruption was still present, but fading and showing brownish discoloration. Kernig's sign was suggestive. There was definite ankle clonus. The patient was comfortable, responding readily to treatment, and was enjoying some chewing gum. The patient lived in Waukon, but on June 1 had gone to a farm a number of miles away and was there when sickness

developed. The farm is close to a heavily wooded timber. The boy had been in the timber, had played with a shepherd dog, and was in the hay fields during the days preceding illness. His mother removed a tick from his hair two or three days before onset of symptoms.

The fourth and fifth cases, R. L., six years of age, and R. H., nineteen years of age, both of Clarke county, were on adjacent farms, about a mile south of Osceola, when they became sick. Onset of symptoms in the younger patient was on July 6; the older boy began to complain more than a month later, on August 18, 1933. H. E. Stroy, M.D., of Osceola, the attending physician, describes clinical and laboratory findings in a separate article in this number of the JOURNAL. Dr. Stroy studied these cases with meticulous care. The six-year-old boy would almost certainly have succumbed to the disease without the skilled medical and nursing attention which he received.

#### THE WOOD TICK AND ITS LIFE CYCLE

In the Rocky Mountain region, the distribution of spotted fever conforms closely with the geographic distribution of the Rocky Mountain wood tick, *Dermacentor andersoni*. A minute organism (*Dermacentor xenus rickettsii*) is regarded as the living agent which causes the disease. Ticks infected with this virus transmit the disease among rodents and larger wild and domestic animals. Human beings play no essential part in the life history of the tick and are only accidentally infected when bitten by infected ticks or through contact with the tissues of ticks which have been crushed. The common dog tick, *Dermacentor variabilis*, is nation wide in its distribution and is now known to play an active part in the spread of this disease. The following account of the life history of the wood tick is quoted from Hygienic Laboratory Bulletin No. 154, prepared by Drs. Spencer and Parker, of the United States Public Health Service, and entitled "Studies on Rocky Mountain Spotted Fever."

"*D. andersoni*, like many other external parasites, undergoes an interesting and complicated life cycle. The adult female, after engorging to many times its normal size, drops from its host and crawls to a sheltered place. Before leaving the host the female is impregnated by the male, which feeds only a short time before seeking its mate. The female remains quiescent a week or more, depending on the temperature, and then begins the deposition of eggs—from 2,000 to 7,000 in number. This sometimes takes a month or even longer. These hatch to seed ticks or larvae, which are not more than one thirty-second part of an inch in their longest diameter. These six-legged larvae feed on ro-



dents, such as ground squirrels, chipmunks, field mice, rabbits, etc.; fifty or more may be found on one small host. After feeding from two to four days and attaining the size of a millet seed, they drop to the ground, pass through a dormant stage, and shed the outer skin, emerging as eight-legged nymphs, which are sexually undifferentiated. They do not become active, however, until the following spring. Like the larvae, they feed on rodents and engorge in from three to ten days, finally reaching a size slightly smaller than buckshot. The engorged nymphs then molt to the adult ticks—males and females—which pass the winter in a dormant condition. The adults attach themselves only to large animals, including man, and are seldom found on animals smaller than a jack rabbit. The larval and nymphal ticks, on the other hand, have never been found on any but small animals, though occasionally nymphs have been removed from children. Although under normal conditions the cycle from egg to adult is completed in two years, it frequently happens that the ticks do not secure a host during the season in which they become active. This causes a high mortality among the larvae and nymphs. The adults are able to survive for two, three, and occasionally four years without feeding. In this way, the life cycle may be considerably lengthened. In the laboratory, however, they are often forced by artificial means to complete the cycle in three months."

This strange disease has apparently established itself in Iowa. Like a number of other diseases, it is of chief concern to those who live on the farm or who frequent wooded districts. How has this disease spread to encompass such a wide area? Dr. R. R. Parker of Hamilton, Montana, has worked for the past eighteen years in an attempt to answer this question. Dr. Parker has been deeply interested in the cases which have thus far occurred in this state. He was in Iowa in October, 1933, and visited the various counties in the state to confer with physicians and to observe conditions in the areas concerned.\* In connection with these cases of Rocky Mountain spotted fever in Iowa, the importation of cattle and sheep from western states has been thought to be a factor in introducing the disease. No apparent relationship could be established between the various cases appearing in widely scattered portions of the state. Dr. Parker believes that cattle do not play a significant part in transporting infected ticks. If this were true, more cases of the disease would be likely to occur in various places along the routes of travel.

\*The writer wishes to acknowledge indebtedness to Dr. Parker for his interest in the Iowa cases, for forwarding reprints and literature dealing with Rocky Mountain spotted fever, and for carrying out the "protection test" on blood specimens which confirmed the diagnosis in two instances.

Such cases have not been observed. Dr. Parker's studies have led him to the opinion that the germ or virus of spotted fever is widespread in nature, that the virus is latent and inactive during certain periods and that another, the rabbit tick, has been a chief factor in spreading the virus in Nature.

#### PREVENTION

Through the work of Drs. Spencer and Parker a vaccine has been perfected which produces a high degree of immunity. The vaccine has been administered to many people who through residence or occupation are frequently exposed to this infection. Laboratory workers are also given protective treatments with the vaccine, which is expensive and difficult to prepare. There is no specific remedy for patients after the disease has developed. The best method of prevention is for those who are subject to exposure on farms or in timber to keep ticks off the body and to avoid direct contact with ticks in removing them from dogs or other animals.

#### SUMMARY

Rocky Mountain spotted fever is a new disease added to the list of acute infectious diseases in Iowa. It is hoped that more work may be done through cooperation with the United States Public Health Service in the further effort to identify the virus in ticks and to determine its mode of spread. Dr. Parker has ably outlined the manner in which the spotted fever virus has become distributed over an increasing area in this country and the problems involved. As the result of his many years of experience in this field, a flood of light has appeared which should go far toward clarifying completely the factors underlying the spread of this disease.

Note.—In the preparation of this paper, much benefit was derived from the volume of collected papers by Howard T. Ricketts, entitled "Contributions to Medical Science," kindly loaned by Walter L. Bierring, M.D., from his private library.

#### ROCKY MOUNTAIN SPOTTED FEVER\*

##### REPORT OF TWO IOWA CASES WITH RECOVERY

H. E. STROY, M.D., Osceola

Rocky Mountain spotted fever is an acute, febrile disease which is transmitted to human beings by the bite of an infected tick. It is characterized clinically by headache, muscular and joint pains most pronounced in the back and extremities, a continuous, moderately high fever, and a petechial eruption which appears first on the ankles, wrists,

\*Read at the Eighth Annual Meeting, Iowa Public Health Association, Des Moines, November 22, 1933.

forehead and lumbar regions of the back, and thence usually spreads over the entire body.

The clinical course of the disease is stormy, lasting from two to three weeks. Treatment is symptomatic with attention directed toward control of hyperpyrexia, toward maintaining elimination, and toward conserving the patient's strength as much as possible. No specific treatment is available. Hospitalization is desirable.

The mortality rate varies from 20 per cent in most localities to 90 per cent in the Bitter Root Valley. Considerable immunity may be obtained through the prophylactic use of vaccine, and one attack of the disease usually grants a lasting protection.

Heretofore, the disease has been considered endemic only in the states of the northwest, but in recent years infections of the spotted fever-typhus group have been reported over a widespread area. During the summer of 1933, five cases of Rocky Mountain spotted fever were reported in Iowa. It has been the good fortune of the writer to serve as attending physician in two of these cases, both of which recovered. A report of these cases follows:

#### CASE ONE

The patient, a male child, seven years of age, was first seen at his home July 8, 1933. He appeared to be desperately ill, with a temperature of 105 degrees, pulse rate of 140, and respirations, 24.

*History:* He had begun having chills and fever on July 6. He vomited persistently for the first twelve hours and complained of severe headache and aching pains in the thigh muscles. He had high fever from the onset, with slight recessions of short duration. The patient's mother stated that he had amused himself for several weeks by picking ticks from his dog, but she did not know that he had received any tick bites. On July 9 the patient had a very severe nose bleed and was brought to the hospital.

*Examination:* The patient was almost moribund, very stuporous and had a muttering delirium. A definite petechial eruption was observed on the wrists and feet, but was not noticeable on other parts of the body. The head and neck were negative; the nose and throat were negative except for a bleeding point on the left nasal septum. An examination of the chest revealed moist, fine râles at both bases. The heart beat was rapid and thready but no murmurs or thrills were discernible. The abdomen was distended and the spleen was palpable under the left costal margin. There was a constant twitching of the left shoulder and the reflexes were exaggerated on the left side. All muscles were extremely tender to pressure and passive motion.

*Laboratory findings:* Urine, specific gravity of 1.020, acid, sugar negative, albumin two plus, microscopic examination negative. Red blood count, 2,430,000; white blood count, 13,200; polymorphonuclears, 72 per cent; monocytes, 28 per cent; hemoglobin, 60 per cent; Widal test negative for typhoid and paratyphoid fevers. Agglutination test negative for undulant fever. Examination of spinal fluid showed eight cells per cubic millimeter. On July 18, Weil-Felix reaction positive in a dilute solution of 1/320; on July 22, Weil-Felix reaction positive in a dilute solution of 1/640.

*Clinical course:* On July 9 the patient lapsed into coma and remained so for two weeks, during which time tube feedings were resorted to. On July 10, two days after admission, the petechial eruption on the wrists and ankles spread over the entire body and became macular in character on the trunk. The eruption remained until July 20 when it began to fade, and by July 30 it had completely disappeared. On July 14 the patient developed a left hemiparesis which persisted for four weeks and began to show gradual improvement. Temperature became normal four weeks after onset of the disease and improvement was progressive. He was able to walk with difficulty on September 1 and left the hospital on September 3.

The patient was readmitted to the hospital on September 20 with the clinical picture of tetany. Seizures were confined to the left side of the face. He responded rapidly to Collip's extract and calcium gluconate and was again able to leave the hospital four days after readmission. He has remained well to this time.

#### CASE TWO

The patient, a white male, eighteen years of age, was first seen August 28, 1933, at his home. He was acutely ill with a temperature of 104 degrees, pulse rate of 120, and respiration, 20. The entire body was covered with a bluish-brown petechial and macular rash, more pronounced on the wrists and feet.

*History:* The patient stated that he had become ill about August 20, shortly after attending a rodeo where he slept out of doors in some hay. He first noticed a severe headache and on August 21 had a severe chill, followed by high fever. On August 24 he had a severe nose bleed which recurred almost daily until he was seen by a physician. The eruption began August 25 on hands and feet, gradually spreading to the forehead and other parts of body. The condition became progressively worse, the patient being delirious before the physician was called. No history of a tick bite was elicited.

*Examination:* The patient was brought to the hospital on August 28, having a muttering delirium



and a bronchial cough. The entire body was covered with a petechial and macular eruption of a bluish-brown color. The head and neck were negative except for the eruption already noted. The nose and throat were negative. A chest examination revealed no areas of consolidation but numerous fine, moist râles were heard over both bases. The heart beat was rapid and the pulse bounding. No murmurs were heard. The abdomen was flatulent and the spleen palpable under the left costal margin. All reflexes were exaggerated and the muscles were very tender to pressure.

*Laboratory findings:* Urine, specific gravity of 1.028, acid, sugar negative, albumin negative. Red blood count, 3,420,000; white blood count, 22,600; polymorphonuclears, 68 per cent; monocytes, 32 per cent; hemoglobin, 70 per cent. Agglutination test negative for undulant, typhoid and paratyphoid fevers. On August 30, Weil-Felix reaction positive in a dilute solution of 1/320; on September 7, Weil-Felix reaction positive in a dilute solution of 1/1280.

*Clinical course:* The patient remained delirious for several days and the temperature varied from 102 to 104 degrees. The prognosis appeared unfavorable for several days, when the condition began to improve. The eruption began to fade on September 1 and had completely disappeared by September 8. Hyperpyrexia was controlled with the utmost difficulty and recurring epistaxis was a disturbing factor in maintaining the patient's resistance. Coincident with the fading of the eruption there was a gradual fall in temperature, together with a clearing of the mental confusion and improvement in the general condition. Temperature became normal on September 9 and the patient was able to leave the hospital on September 12. Convalescence was uneventful and recovery complete.

### THE FINLEY HOSPITAL CLINICO- PATHOLOGIC CONFERENCE

#### SUDDEN DEATHS FROM SYPHILITIC AORTITIS

F. P. McNAMARA, M.D., Dubuque

Syphilis of the aorta is well recognized as one cause of sudden death. Rarely the lesion causing death is sharply localized at some vital center. More often extensive anatomic changes are found at necropsy. Each type of lesion is found in the three cases to be considered. Two of the cases

were instances of unexpected deaths in middle-aged men previously considered well. The third was that of an elderly woman who had complained of gastric distress for two months and who might well have been suspected of having gastric carcinoma.

#### CASE ONE

The patient, a white man forty-five years of age, was first seen a few minutes before his death. At that time his face and upper chest were livid and he was gasping for breath. He died before any treatment could be given. His family stated that he had always been well and as far as known had never consulted a physician.

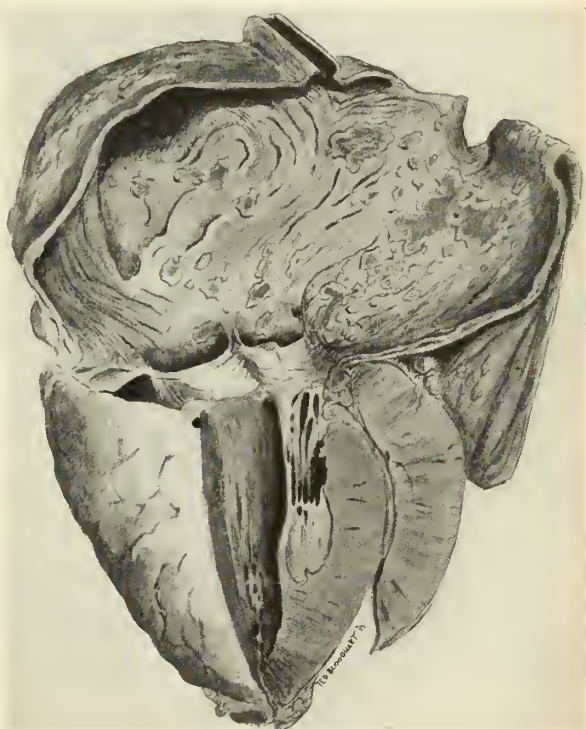


Fig. 1.—Drawing of the aneurysm of the ascending aorta in Case One.

*Anatomic diagnosis:* (Fig. 1) Primary: Syphilitic mesaortitis; aneurysm of the ascending aorta; syphilitic orchitis; cardiac hypertrophy; arteriosclerosis.

*Subsidiary:* Simple cysts of the left kidney; perisplenitis.

#### CASE TWO

The patient, a white woman seventy-seven years of age, was found dead in bed.

*Family history:* The husband died several years before of an unknown cause. A son is living and well, but a daughter is feeble-minded.

*Past history:* She had lobar pneumonia one year ago and typhoid fever many years previous.

*Present illness:* For two months the patient had complained of pain in the epigastrium which occurred after eating. She felt better if she took only fluid or nothing at all. The pain was not relieved by taking soda bicarbonate. She was ad-

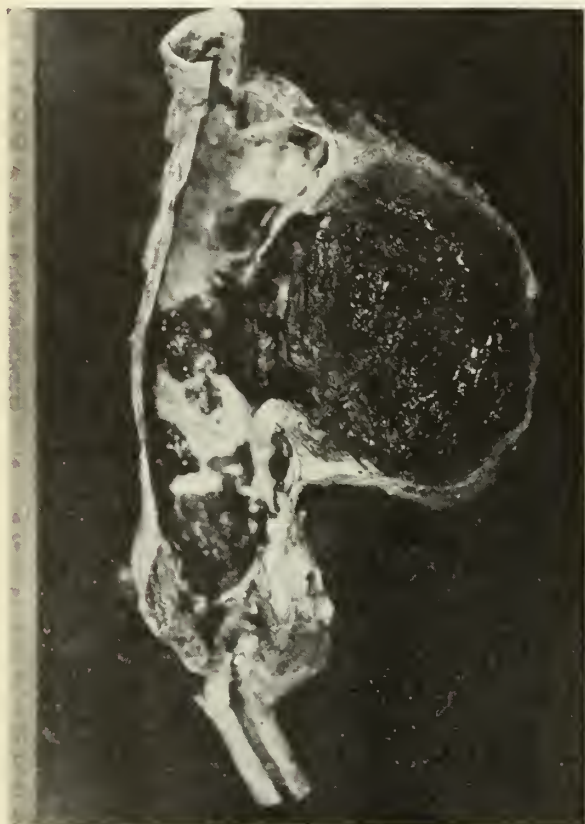


Fig. 2—Photograph of the thrombosed, saccular aneurysm and the mycotic aneurysm of the abdominal aorta in Case Two.

vised to enter the hospital for more complete studies, but "kept putting it off." She retired as well as usual but was found dead the next morning.

*Anatomic diagnosis:* (Fig. 2) Primary: (1) Syphilitic mesaortitis; saccular, thrombosed aneurysm of the abdominal aorta; rupture of the aneurysm with peritoneal hemorrhage. (2) Arteriosclerosis; mycotic aneurysm of the abdominal aorta.

*Subsidiary:* Bilateral fibrous pleurisy; apical pulmonary tuberculous scar with calcified hilic lymph node; adenoma of the right adrenal; hypertrichosis; fibromas of the uterus; simple cysts of the liver.

### CASE THREE

The patient, a white man, fifty-two years of age, was dying when first seen by a doctor. The history indicated that he had been ailing for ten days but was not considered seriously ill. Shortly before he died he had a sudden attack of excruciating pain in the cardiac region, and collapsed.

*Clinical diagnosis:* Coronary disease.

*Anatomic diagnosis:* Primary: (1) Syphilitic mesaortitis; occlusion of the orifice of the right coronary artery; acute cardiac dilatation and acute cardiac congestion of all the visera. (2) Arteriosclerosis.

*Subsidiary:* Bilateral fibrous pleurisy; apical pulmonary tuberculous scar with calcified hilic lymph node; adenoma of the adrenal; chronic cholecystitis and cholelithiasis.

### COMMENT

The first case is an example of the most common type of aneurysm, that of the arch of the aorta. While there were thickenings of the insertions of the aortic cusps with very slight separa-



Fig. 3—Drawing of a section of the aorta in Case One showing the characteristic histopathology of syphilitic aortitis.

tion, it is probable that if aortic insufficiency had resulted it was of recent origin. No evidence of syphilitic myocarditis was found in microscopic preparations. The sections from the aorta presented the picture recognized as typical of syphi-



litic aortitis (Fig. 3). The coronary arteries were not involved. The fibrosed testis was also of syphilitic origin.

In the second case the aneurysm was in a comparatively rare site, the abdominal aorta. It was saccular and was filled by an old and recent thrombus. In the most dependent portion the wall was extremely thin and had perforated, resulting in a peritoneal hemorrhage. The aneurysm was found just below the left diaphragm and was pressing upon the stomach. Probably the pressure explained the gastric symptoms complained of by the patient. A second fusiform aneurysm was found just above the bifurcation of the abdominal aorta. This was filled with an infected clot and was judged to be a mycotic aneurysm as the changes characteristic of syphilis were lacking in the sections. Arteriosclerosis was pronounced in each case but especially in the second.

In the third case the aorta was irregularly wrinkled and scarred. The orifice of the right coronary artery was covered by a fibrous, partly calcified layer. The left orifice was not affected. Microscopically the sections showed the changes typical of syphilis.

The cases cited emphasize the fact that syphilis is essentially a disease of blood vessels. Stokes\* states that "in almost any clinical aspect of syphilis, and in any method of classifying its morbid phenomena, a vascular element will be apparent. Vascular change underlies the necrosis of gumma, the absence of hemorrhage from syphilitic gastric ulcer, the smooth serum-discharging surface of the chancre with its hemorrhagic border. It may underlie the hemiplegia that follows rupture or thrombosis of the leucostriate artery in the internal capsule, or the anginal syndrome that follows syphilitic sclerosis of the coronary vessels." He emphasizes that clinical symptoms resulting from such vascular changes may be slight, or masked as diseases of other structures in a majority of instances. Therefore it is essential for every member of the medical profession to be constantly on the watch for syphilis in every patient. Certainly, no examination in middle-aged patients is complete without a serologic test for the disease.

I wish to express my appreciation to Drs. L. E. Cooley, L. A. Faber, and W. A. Henneger of The Finley Hospital Medical Staff for the use of their clinical histories.

\*Stokes, John H.: *Modern Clinical Syphilology*, W. B. Saunders Company, Philadelphia, 1927.

#### ANNUAL MEETING, IOWA TUBERCULOSIS ASSOCIATION AND IOWA HEART ASSOCIATION

The annual meeting of the Iowa Tuberculosis Association and the Iowa Heart Association will be held at the Hotel Fort Des Moines in Des Moines, on Friday, March 22. All doctors are urged to attend this important session. The preliminary program follows:

JOHN H. PECK, M.D., Des Moines, presiding:

10:00—Symposium: "Finding the Tuberculosis Case."

The Mantoux Test—C. B. Hickenlooper, Winterset.

The X-Ray—J. C. Parsons, Creston.

The Diagnosis—Lee F. Hill, Des Moines.

11:00—Symposium: "Cardiac Cripples."

The Mental—Fred M. Smith, Iowa City.

The Rheumatic—H. W. Rathe, Waverly.

The Arteriosclerotic—D. J. Glomset, Des Moines.

The Hypertensive—R. N. Larimer, Sioux City.

12:15—Luncheon—Green Room, Hotel Fort Des Moines.

Fred M. Smith, M.D., President, Iowa Heart Association, presiding.

Greetings—Walter L. Bierring, M.D., Des Moines, President of the American Medical Association.

The Value of the Laboratory Aids in Cardiology—Walter W. Hamburger, M.D., Chicago.

1:45—Business Meeting and Election of Officers.

L. R. WOODWARD, M.D., Mason City, presiding:

2:00—Symposium: "Fight Tuberculosis with Modern Methods."

Nature Aids the Doctor—G. R. Johnson, Ottumwa.

Sanatorium Protection—J. C. Painter, Dubuque.

Splinting the Lung—H. L. Beye, Iowa City.

Making the Cure Stick—W. M. Spear, Oakdale.

Summary: Modern Weapons—E. A. Meyerding, St. Paul.

3:15—Symposium: "The Circulatory Load."

In Surgery—H. C. Bone, Des Moines.

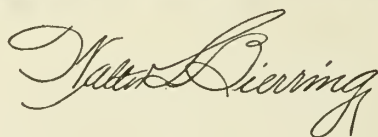
In Infections—B. F. Wolverton, Cedar Rapids.

In Metabolic Disturbances—A. A. Johnson, Council Bluffs.

In Obstetrics—E. L. Wurtzer, Clear Lake.

And Exercise—H. M. Korns, Iowa City.

# STATE DEPARTMENT OF HEALTH



## SERUM CENTERS ACTIVE

Sidney O. Levinson, M.D., of the Samuel Deutsch Serum Center, Michael Reese Hospital, Chicago, was in Waterloo, Monday, February 18, where he obtained blood from thirty-two donors who had recovered recently from an attack of measles. The State Department of Health co-operated with J. E. Ridenour, M.D., Waterloo city physician, city and school officials, physicians and nurses, in arranging for Dr. Levinson's work in Waterloo. Publicity by the staff of the *Waterloo Courier* was a chief factor in acquainting the people with the value of convalescent serum in disease prevention. Children of twelve years or above and older persons, who volunteered to serve as donors, were paid five dollars each. About 125 c.c. of blood were taken from the younger donors and not over 250 c.c. from those of 'teen age or from adults. The work was done in the offices of the Visiting Nursing Association in Waterloo. Similar work is being planned for Iowa Falls and Dubuque.

For over five years the Samuel Deutsch Serum Center has been active in the production and distribution of convalescent serum. The organization of a serum center in Milwaukee was made possible recently by a gift from a prominent business man whose child benefited by serum treatment. Convalescent serum for such diseases as measles, poliomyelitis and scarlet fever, obtained and processed by the Samuel Deutsch Serum Center, is made available for various hospitals and institutions in Chicago. Serum is also supplied to physicians, at a moderate cost or, in the case of underprivileged children, without charge.

Dr. Levinson has had extensive experience in the use of convalescent serum. He recommends in the case of measles, five c.c. of serum for infants and 7.5 c.c. for older children. If administered by the fourth day after exposure, the disease as a rule is prevented. Treatment on the sixth or seventh day causes a modified attack. If parental whole blood is used, the amount should be at least double that of serum. When indicated, a Wassermann report should be obtained. Dr.

Levinson reports good results with the use of convalescent serum in the prophylaxis of scarlet fever and treatment of severe cases of the disease. Depending on the age of contacts or patients, from ten to twenty c.c. of convalescent serum are given prophylactically, or forty to eighty c.c. as a curative measure. Dr. Levinson has offered to forward to the State Department of Health in Des Moines a supply of measles convalescent serum. The serum will necessarily be very limited in amount. It will be available about March 15 for distribution to physicians and hospitals in the state. On certification that the preventive agent is to be administered to a member of an indigent family, the serum will be sent without charge.

The field of serum therapy is developing wider scope from year to year. It is hoped that a more adequate appropriation may make it possible for the State Department of Health to participate more actively in the development of a center for the distribution of serum preparations in Iowa.

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## RULES AND REGULATIONS

Proposed changes in Rules and Regulations of the department as pertaining to scarlet fever, measles and other conditions, will not be in effect until further notice is given relative to action taken by the State Board of Health.

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## MEASLES IN IOWA IN 1934 AND 1935

### *Morbidity From Measles*

The current major outbreak of measles in Iowa has approached a maximum degree of prevalence, which in all likelihood will be maintained through March, April and May. Unduly prevalent a year ago, the epidemic gathered momentum during the fourth quarter of 1934 and is now apparently at its height. Table I shows a great increase in reported cases of measles for 1934, and for January and February of 1935, as compared with the average figure (first column), based on records for the nine-year period, 1924 to 1932.



TABLE I  
MEASLES MORBIDITY IN IOWA

Month	Tri-central Median 1924-1932	Reported Cases 1934	Reported Cases 1935
January	322	219	4,580
February	273	481	5,640
March	401	884	?
April	257	976	?
May	258	1,432	
June	151	679	
July	47	168	
August	10	33	
September	9	17	
October	10	102	
November	11	905	
December	38	3,081	

The figures in the first column of the above table are based on monthly reports for the nine-year period, 1924 to 1932. The term "tri-central median" is discussed in an article by Professor M. E. Barnes in the April, 1934, issue of the JOURNAL, page 209. Measles cases reported to the Iowa State Department of Health in January, 1935, numbered 4,580, more than fourteen times the average or expected number (322) for the period, 1924 to 1932. The number of cases reported in February was 5,640, exceeding by over twenty times, the average number (273) for the same nine-year period.

Mortality From Measles

The normal or expected number of deaths from measles for each month is based on mortality records for the nine-year period, 1924 to 1932. See first column of the following table:

TABLE II  
MEASLES MORTALITY IN 1934

Month	Tri-central Median 1924-1932	Measles Deaths 1934
January	3	0
February	6	4
March	5	5
April	6	15
May	5	14
June	4	16
July	1	4
August	0	2
September	0	0
October	1	0
November	0	4
December	1	6
Provisional	—	—
Totals	32	70

It will be noted in Table II that an excessive number of fatalities due to measles occurred during April, May and June of 1934. Judging from past experience and from the thousands of cases of the disease which are being reported at this time, the months of March, April, May and June of this year (1935) will in all probability witness deaths from measles similar in number to those which were recorded in the major outbreaks of 1924, 1927 and 1930.

Preventive Measures

Since specific measures are available through the use of adult (parental) whole blood or convalescent serum, to prevent or modify the attack of measles, every effort should be put forth by physicians to make serum therapy more widely applicable. Mortality records show that the most deaths occur in infants and children under two years of age. In Baltimore, for the period, 1926 to 1933, the fatality rate for infants under one year was 5.74 per cent, and for those under two years of age, 2.96 per cent.

Children in many homes suffer an attack of measles, and their parents have little or no thought of calling a physician. Parents need to appreciate the importance and value of specific preventive measures, particularly as applied to infants and others in the home whose health or resistance are below par. The method of administering immune adult blood to prevent or modify measles was described in the December, 1934, issue of the JOURNAL, page 631. The JOURNAL for February, 1934, page 104, also carried an article on this subject as well as further references. It is hoped that an increasing number of physicians will embody the principles of serum treatment in their practice and urge it upon families in their clientele as the chief means of effecting lowered mortality from measles.

PREVALENCE OF DISEASE

	Jan. '35	Dec. '34	Jan. '34	Most Cases Reported From
Diphtheria	46	36	54	Black Hawk, Woodbury
Scarlet Fever	296	246	388	Polk, Pottawattamie
Typhoid Fever	8	14	5	Lee, Wayne
Smallpox	6	9	25	(For State)
Measles	4,580	3,081	219	Black Hawk, Dubuque
Whooping Cough	55	59	148	Woodbury, Wright
Cerebrospinal Meningitis	4	4	4	Polk
Chickenpox	301	476	498	Woodbury, Clarke
Mumps	602	342	208	Dubuque
Poliomyelitis	0	2	0	
Tuberculosis	42	18	29	(For State)
Undulant Fever	14	7	7	(For State)
Syphilis	148	125	142	(For State)
Gonorrhea	172	151	192	(For State)

# The JOURNAL of the Iowa State Medical Society

ISSUED MONTHLY

RALPH R. SIMMONS, Editor.....Des Moines

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## SPECIAL SESSION, HOUSE OF DELEGATES, AMERICAN MEDICAL ASSOCIATION, CHICAGO, FEBRUARY 15, 16, 1935

This will always be regarded as a historic session of the House of Delegates, called as it was to consider problems of great moment and basic importance to the practice of medicine in this country. It was an impressive gathering and distinguished by the clarity and earnestness displayed in the discussions and the unanimity with which the final action was adopted.

An official statement prepared by the Board of Trustees was helpful in that it outlined the development of medical opinion on the subject of sickness insurance from the discussions that had occurred in previous sessions, the various schemes developed under governmental auspices in foreign countries, as well as studies conducted by the three philanthropic foundations, the Twentieth Century Fund, the Milbank Fund, and the Rosenwald Fund, the Commission on Medical Education and the Committee on the Costs of Medical Care. Further, the results of the President's Committee on Economic Security with its Medical Advisory Board were presented along with pending legislation on compulsory sickness or health insurance in Congress and several state legislatures. The Board of Trustees also submitted six questions as a further suggestion in formulating the final action.

After a comprehensive and general discussion in which a large number of delegates and officers of state societies took part, and extending through the first day, a reference committee of seven members was appointed by the Speaker to report on the morning of the second day session.

This report will receive wide publication and is a remarkable document in many respects. It is significant in the firm stand taken to condemn all efforts at regimentation of the medical profession and lay control of medical practice as being fatal to medical progress and tending inevitably to lower

the quality of medical service now available to the American people. It emphasizes that the primary responsibilities of physicians constituting the American Medical Association are the welfare of the people, the preservation of their health and their care in sickness, the advancement of medical science, the improvement of medical care, and the provisions of adequate medical service to all the people; and further, that these physicians are the only body in the United States qualified by experience and training to guide and control suitable plans for the provisions of medical care.

The House of Delegates reaffirmed its opposition to all forms of compulsory sickness insurance whether administered by the Federal Government, the governments of the individual states, or by any individual industry, community or similar body. It likewise reaffirmed its encouragement to local organizations to establish plans for the provision of adequate medical service for all the people adjusted to present economic conditions by voluntary budgeting to meet the cost of illness.

The House of Delegates recognized certain fundamental considerations for adequate and safe medical service contained in the report of the President's Committee on Economic Security of January 17, 1935, but directed attention to the inconsistencies in some of the eleven principles incorporated in this report, particularly that the standards for health insurance practice should be entirely under federal control.

A strong disapproval was expressed in regard to that provision in the Wagner bill which places the responsibility of administration and supervision of medical services for crippled children and preservation of child and maternal health in the Children's Bureau of the Department of Labor. There is also a strong condemnation of that section of the Wagner bill which creates a social insurance board without specification of the character of its personnel to administer functions, not only old age pensions, unemployment and other forms of insurance now contemplated, but also health insurance. If this should be enacted in the law it would mean that any health insurance control would be under this lay or non-medical board.

The so-called Epstein bill proposed by the American Association for Social Security and now being promoted with propaganda in the individual states is properly designated as a vicious and dangerous measure. This proposed law has been previously analyzed by the American Medical Association and shown to contain such hazardous principles as multiple taxation, inordinate costs, extravagant administration and inevitable trend toward social and financial bankruptcy. There is throughout this proposal an apparently studied and care-



fully developed design to prevent the medical profession from having any voice in the management of medical service.

The House of Delegates recorded its approval of the careful study by the Bureau of Medical Economics of the more than 150 plans of medical service now undergoing development and trial in various communities in the United States. The Bureau is ready to advise medical societies in the further creation and operation of such plans. It is recognized that such plans will serve the people of the community in the prevention of disease, the maintenance of health and with curative care in illness. All such plans must at the same time meet apparent economic factors and protect the public welfare by safeguarding to the medical profession the functions of control of medical standards and the continued advancement of medical educational requirements.

A significant feature of the action taken by the House of Delegates is the definite distinction between provision for hospital facilities and the physician's services. This recognizes the well known fact that by far the largest part of the economic burden of illness is the hospital expense. The payment for medical service, whether by prepayment plans, installment purchase, savings funds, or so-called voluntary hospital insurance plans, must hold as absolutely distinct, remuneration for hospital care on the one hand and the individual, personal, scientific ministrations of the physician on the other. This incorporates the principles contained in some of the proposed plans advocated by a number of special medical and hospital associations.

Finally the Board of Trustees was directed to request the Bureau of Medical Economics to study further plans existing and such as may develop with special reference to the way in which they meet the needs of their communities, the costs of operation, the quality of service rendered, the effects of such service on the medical profession, the applicability to rural, village, urban and industrial population, and to develop for presentation at the meeting of the American Medical Association in June, model skeleton plans adapted to the needs of populations of various types.

The general impression left by this historic session of the House of Delegates was distinctly encouraging and stimulating. The delegates and all those who attended were infused with renewed pride and enthusiasm in the American Medical Association, and more fully determined than ever to carry forward the precepts and ideals of organized medicine to their respective communities in every possible way.

Walter L. Bierring, M.D., President,  
American Medical Association.

### MEDICAL RELIEF PROGRAM

At a conference of the executive officers and the Medical Economics Committee of the Iowa State Medical Society, the Iowa Emergency Relief Administration, and Dr. K. E. Miller, Senior Surgeon of the United States Public Health Service, a study of the medical relief situation in Iowa was made. It developed that there were five rough divisions or types of medical relief service in the various counties of the state as follows:

1. Salaried county physicians.
2. Lump sum contract on an annual basis between the county medical society and the county board of supervisors.
3. Fee schedule contract between the county medical society and the county board of supervisors.
4. Informal agreement between the county medical society and the county board of supervisors, subject to cancellation at will, with considerable lack of uniformity as to fees.
5. No organized plan. Doctor submits bills, supervisors pay what they think the case merits.

Another group making the same survey could as well have made twenty classifications, the point being that there is no such thing at the present time as a uniformity of treatment for medical relief in our state, and so far as I know, from what investigation I have been able to make, there is no such thing in the country as a uniform program. In consequence, and in anticipation of an early need, the above named individuals and groups requested the writer to outline a program to be available when and if the need presented itself. It should be borne in mind that no funds have been allocated to carry on this program and the developments of the relief situation in Washington will have a controlling influence on any plans which we may present. If, however, conditions progress as those interested believe they will, limited funds will be available.

There are approximately forty counties in Iowa which have sold their legal bond limit, or have so closely done so that there is no further market for their bonds. For this purpose these counties can be considered bankrupt, and in them exists the most urgent need. They should receive attention first before more fortunate counties are considered. We are not attempting to build an ideal medical, dental, or nursing program; funds are not available for such a laudable undertaking. The basic thought is to care for the normal poor needs, and especially to keep the unemployed employables on their feet so that they may become producing units if the opportunity of employment should arise.

The personnel at Relief Headquarters in addi-

tion to the writer is the Director of Relief, Ina T. Tyler, and State Relief Administrator, E. H. Mulock. Insofar as possible the personnel of the state and county medical societies will be used in official capacities. Dr. Gordon F. Harkness, president; Dr. Thomas A. Burcham, president-elect; Dr. Robert L. Parker, secretary; Dr. Oliver J. Fay, chairman of the Board of Trustees, and the Medical Economics Committee, composed of Dr. Thomas F. Thornton, Dr. James C. Hill and Dr. J. C. Donahue, will act in close cooperation with the State Emergency Relief Office. To this group is added Dr. Walter L. Bierring, State Health Commissioner. The eleven councilors of the state will act as field contacts and advisors over their individual territories. Because of the statewide nature of the program each deputy councilor will act as chairman of the County Medical Relief Committee and to him will be added the president and secretary of the county medical society. This committee will act in close cooperation with the County Director of Relief, who is the one who must authorize all relief service.

The County Medical Relief Committee has considerable amount of arbitrary power, subject to the consent of the Director of Medical Service, but its authority and rules governing the same are too extensive for a brief article. However, the County Medical Relief Committee will supervise all medical and surgical procedures in the county and, with a consultant nurse and consultant dentist, the services of the dental and nursing groups as well. It will consider all claims for fees and other services with the authority to adjust the same if such fees seem exorbitant, false, or technically incorrect.

No county will be forced to adopt the medical relief program which we are now considering except those counties which require state or federal funds for medical, dental, and nursing relief purposes. Any arrangement that is made for this service, in a county adopting it, will be subject to discontinuance at will and on notice by the profession, the State Relief Office, or the board of supervisors. The contract constitutes a basis of understanding which will be continued only as long as all parties are satisfied and cooperating. The funds normally expended by a county for poor relief, plus the emergency relief funds from the state or federal government, represent a total covering both the normal poor load and the emergency load. It is evident that of such total a percentage belongs to the medical, dental, and nursing relief need. This percentage will be determined as accurately as possible and that will be all of the money available for medical, dental, and nursing needs and there will be no addition. The

Medical Economics Committee of the Iowa State Medical Society and the State Relief Office have agreed upon an emergency fee schedule which is admittedly low and in no way any criterion whatsoever of what the services are worth. These services in a given county on this program, if the total amount does not exceed the funds available, will be paid as earned on the approval of the County Medical Relief Committee and Director of Medical Service. If, however, the fees exceed the funds available from all sources, federal, state and county for this purpose the fees of all co-operating members of the profession will be reduced proportionately in harmony with the percentage of excess of the above funds available.

In our ninety-nine counties it has been the practice of the supervisors and certain members of the county medical societies to negotiate some form of agreement for the giving of medical service. Under the proposed program the State Relief Office with myself, in conference with the executive officers and the Medical Economics Committee of the Iowa State Medical Society, have agreed upon the basis of compensation for all medical and surgical procedures, for those counties seeking state or federal funds. In such counties this plan will relieve the county medical group of the necessity of negotiating an individual arrangement and places the relief office, representing the Iowa State Medical Society as well, in a position to complete an agreement with the various boards of supervisors as needs may arise. This arrangement will of necessity be on a uniform basis because as you readily see the procedure of record keeping on any other basis than a uniform one is impossible. Each doctor in the community who wishes voluntarily to agree to cooperate under the medical fee agreement will sign a short three paragraph agreement to that effect, and only those doctors who have signed this form will be eligible to give medical relief service.

Of special interest to the profession is the proposed flexible fee schedule arrangement. It is the opinion of the writer that until we are able to standardize patients for those things which afflict them, anything other than a flexible fee schedule agreement would be contrary to the experience of the profession and, therefore, contrary to the best interest of the profession. Too much emphasis cannot be placed on the statement that this whole program as now conceived is an emergency program and that the fees agreed upon are decidedly emergency fees, and are to be accepted as no criterion whatsoever of what a proper fee arrangement should be when normal conditions return. The only source of authority for our plans is Rules and Regulations No. 7 issued by the Na-



tional Relief Administration. In the rules it is specifically stated that those individuals licensed to practice medicine in the state are the only ones eligible to give medical relief. So far as your State Administrator is concerned, the statement just referred to means exactly what it says.

T. C. Denny, M.D.,  
Director of Medical Service.

#### LEGALIZED EUGENIC STERILIZATION

Eugenic sterilization or the sterilization of the unfit has been authorized or demanded in several foreign countries, and has been legalized either as a compulsory or voluntary measure by several states in this country. The most widespread program of this sort is probably being conducted in Germany at this time. In the United States the experience of California during the last twenty-five years, affecting 8,506 patients, gives insight into the practical application of these measures in this country. After these years of experience observers in California report entirely favorably on the procedure. They stress that "it in no way unsexes the patient," but effectively prevents parenthood. "It permits many patients to return to their homes, who would otherwise be confined in institutions for years. It protects children from being born to be brought up by mentally diseased or mentally deficient parents or by the state. It takes a great burden of expense off the taxpayer, and enables the state to care for more patients than would otherwise be possible. It has been followed by a marked decrease in sex offenses."

Cognizance and study have been given to this problem in Iowa, and the state legislature in 1929 passed a law which legalized eugenic sterilization. A Board of Eugenics was established and met once, but did nothing to carry out the provisions of the law. About a year ago Governor Herring called a meeting of the board, which went on record as failing to function because it feared that the provisions would not be upheld by the courts if he carried out the law. High legal authority believes that the fear is unfounded. However, a committee of five was chosen to prepare a sterilization law which would definitely protect the physician and which would simplify the procedure necessary to effect the end desired. This bill is now ready for presentation to the legislature. The bill provides for voluntary sterilization. By "voluntary" is meant "with consent of the applicant and of his guardian, if he is a minor." Application may be made to any physician and surgeon or to the superintendent of any hospital supported in whole or in part by public funds. Such physician or superintendent may approve or disapprove

the reasons given. If approved, formal written request with reasons for the request must be made to the Board of Eugenics, who makes the final decision. The present Board consists of nine members. The new bill provides for three; the Commissioner of Public Health, a member of the Board of Control, and a physician who will be appointed by the governor. These, in brief, are the provisions of the proposed law.

While the committee believes that physicians because of their scientific training and their frequent contacts with problems of this sort will unanimously endorse a workable plan for legalized eugenic sterilization they also realize that without the approval of the physicians of the state and their cooperation no eugenic law can be effective. They, therefore, request that physicians keep themselves informed concerning this matter and lend their support for the enactment of this legislation.

#### DISCUSSION ON THE BASIC SCIENCE BILL

Dr. D. W. Morehouse, president of Drake University, made the following remarks on behalf of the Basic Science Bill, at a hearing on the bill before the Joint Public Health Committee in the Senate Chamber, at the State House in Des Moines, Thursday, February 7:

"Mr. Chairman, Members of the Committee, ladies and gentlemen and friends all: I would like to have it distinctly understood that I am not here in the interest of any one group. I am not speaking for or against any organization of the healing arts. My interest here today is that of science purely. I find that the attitude of some of the speakers is wholly personal. I hope you will believe me sincere when I say that that is not my attitude.

"I have seen the work of science for some years. I have taught it for many, many years. I have been associated in one way and another with the healing arts and I believe the practitioner who thoroughly understands the simple basic laws upon which his science rests, is the most efficient, the most satisfactory type of practitioner. Science stands today, in spite of any personal bias that men may have, unchallenged and unabashed before the world. Science has revolutionized the world. It has been no hocus pocus proposition. It has stood for those fundamental principles which the scientist as such, without any bias, without any personal interest, without anything except the desire for the truth, has established as fundamental.

"To those of you who seem to be so violently opposed to these basic sciences I want to say that a knowledge of the simple elements of physics, and chemistry, and biology, is not going to detract in any way from your profession. Ignorance is

the greatest enemy that the public has, whether it is in health, in politics, or in the government, and the sooner we recognize that science drives out ignorance, that it has been able to give to the human mind and human life greater benefits than any other system of human thought that has been developed, the better it will be for all concerned.

"What has the x-ray done for the healing arts? What has chemistry done for the healing arts? What about the microscope, with its revelations in the great field of bacteriology? Do you want to say that because we ask knowledge of these things by the man who is going to practice the healing arts that we are selfishly trying to drive out competition, trying to establish class legislation? This is not the attitude of the men who have anything to do with pure science. Are you not willing to admit that the public is being imposed upon under many a guise and most particularly under the guise of the so-called sciences. Do not let your enthusiasm for your own immediate interests exceed your good judgment.

"Is it not necessary for a man to know the difference between an alternating current and a direct current if he is going to use electrical apparatus connected with the healing arts? Is it not necessary for a man to know the difference between an element and a compound if he is going to practice the healing arts? Should he not know something of microscopy if he is going to study the human tissues? Should he not know something of pathology? To what do we owe our advance in medicine, if not to the basic sciences? Certainly not to astrology with its mythical deceptions.

"I was called the other day by a friend who asked me when the planet Mercury turned back in its orbit. She had been reliably informed, she said, that stocks were to change when Mercury changed on the seventh of February. Ladies and gentlemen, are we going on admitting such hypocrisy? Are we going on admitting that the fundamental sciences which you and I have studied all our days cannot be recognized from such superstition and deceit? From the days of Galen to our present time, the basic sciences have done more for the development of medicine than all the other studies combined.

"So I come to you, my friends, not against A, or with B, not for this profession or against that profession, but as a common citizen who recognizes that the man who knows the basic sciences as they apply to the various phases of the healing arts, as they apply to the life of a nation, is thus best prepared to serve his fellow men. Nothing has done so much for the whole world as the technical discussion of the structure of the atom. It has given

us the radio. It has given us the x-ray. It has given us the whole field of wireless telegraphy. We have saved thousands and tens of thousands, yes millions of souls, because some man wanted to know the structure of matter. By his discoveries there have been given to you and to me these great advancements in applied science. Nothing on the other hand is so detrimental as superstition and ignorance, ignorance of these basic principles upon which civilization stands. My plea and my statement, therefore, is for science; not for, nor against; not with enmity toward any man. We need all the trained men there are in the world. Science needs leaders. Humanity needs men who will give their lives for the betterment of man.

"This does not mean that we are to go at our task hocus pocus. We should have entrenched in the minds of the public that we stand for no form of hypocrisy. We have too much astrology in politics, in education, in government, in medicine and in many other things. Let us stop and think! You, who are today against this proposition, will be thankful that the time has come when we all recognize the necessity of these fundamental basic subjects which every sane man knows is the foundation of the great realm of science. It is science I plead for as against pseudoscience; not for this group or that group, but for the recognition of the difference between right and wrong, truth and error, good and evil."

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#### THE ANNUAL CONGRESS ON MEDICAL EDUCATION, HOSPITALS AND LICENSURE

These annual conferences are arranged by the Council on Medical Education and Hospitals of the American Medical Association in cooperation with the Federation of State Medical Boards of the United States. Beginning in 1905 they have been recognized as an index each year of the progress of medical education, licensure procedure and the development of teaching hospitals. The attendance was considerably larger this year, because the meeting was preceded by the special session of the House of Delegates.

The report of the chairman, Dr. Wilbur, dealt mainly with the resurvey of medical schools. Some interesting facts are being revealed which will probably lead to a complete reclassification of schools with particular reference to facilities for clinical teaching. The special addresses by President Watters of the University of Cincinnati on the Restriction of Professional Students, by Dr. Sigerist of Baltimore on the History of Medical Licensure, and by Dean Scammon of the Univer-



sity of Minnesota on the Larger Social Aspects of Medical Education, presented interesting discussions of the subjects involved. A symposium on tuberculosis occupied the first afternoon, presenting the institutional and educational aspects of the subject, and participated in by such leading authorities as Drs. Kendall Emerson and James Alexander Miller of New York, Dr. James J. Waring of Denver, Dean L. J. Mooreman of Oklahoma City, Dr. Kenneth Dunham of Cincinnati, and Dr. J. A. Myers of Minneapolis. The discussion included the objectives of tuberculosis campaigns, education of physicians in tuberculosis, historical aspects, and the functions of the general hospital in the treatment of tuberculosis.

The Federation dinner on Monday evening is an annual affair; this interesting occasion was attended by ninety guests, comprising university presidents, deans of medical schools, hospital administrators and members of state examining boards. The dinner was saddened by the absence of Dr. Henry M. Fitzhugh of Baltimore, president of the Federation of State Medical Boards, who died on January 25. The address of the evening was given by Dr. Henry S. Sigerist, the historian, who chose as his subject, *Sidelights on the Practice of Medieval Surgeons*, devoting his comments largely to that interesting medieval surgeon Henri de Mondeville (1260-1320), who wrote a treatise on surgery abounding with much wit and sarcasm applicable to his period. Some of his expressions were "many more surgeons know how to cause suppuration than to heal a wound," "keep up your patient's spirits by music of viols and ten stringed psaltery, or by forged letters describing the death of his enemies, or by telling him that he has been elected to a bishopric, if a churchman," and "collect your fees in advance."

The forenoon of the second day was devoted to a symposium on the question "Should the radiologist, the pathologist and anesthetist be licensed to practice medicine?" In this discussion, representatives of the specialties concerned, the hospital, administrator, the surgeon, the internist and licensure examiner took part. There seemed to be a consensus of opinion that the radiologist, clinical pathologist and anesthetist are engaged in the practice of medicine, and as such should come within the requirements of medical licensure.

The distinctive feature of the closing afternoon session was the report of Dr. Etherington, Dean of Queen's University Faculty of Medicine, Kingston, Ontario, on the result of an extensive investigation of American Schools of Osteopathy. This survey was made in 1933 and 1934, and shows a careful insight into conditions existing in these schools. The report was tinctured with rare wit

and humor, and when it is published will prove most interesting reading.

The subject, *Extension Teaching in Medicine*, was ably presented by Dr. Charles Gordon Heyd, Professor of Clinical Surgery, New York Postgraduate Medical School, and Dr. Daniel J. Glomset of Des Moines. The latter was a presentation of the work of the Iowa Speakers Bureau, and the relation of the state medical society in promoting postgraduate medical education. It was recognized that in this movement for the continued study of the practicing physician, Iowa had taken a pioneer part. Dr. Glomset concluded his address by an appeal that in these days of medical economic discussions, we must be mindful of our primary obligations in the advancement of medical science, and the critical maintenance of the high character of service rendered through constructive programs for continued or postgraduate study.

A paper on *Whether Internes are Practicing Medicine*, by Dr. Harold Rypins of New York, and the *Need of Uniform Standards of Licensure* by Dr. C. B. Pinkham of California concluded the two days' program of the Congress which attracted alike the interest of the medical educator, the clinician, hospital superintendent, and the licensure examiner.

Walter L. Bierring, M.D., Sec'y-Treas.  
Federation of State Medical Boards  
of the United States.

#### NORTHWEST MEDICAL CONFERENCE

On Sunday, February 24, representatives from fourteen states in the middle west (North Dakota, South Dakota, Nebraska, Colorado, Wyoming, Montana, Kansas, Missouri, Iowa, Minnesota, Wisconsin, Indiana, Michigan and Illinois) gathered in St. Paul, Minnesota, to attend the annual meeting of the Northwest Medical Conference. This conference, which originated several years ago as a meeting of the medical society secretaries of some of the states in the northwest, has developed into an outstanding session, designed for all officers and other representative doctors from the societies in the fourteen northwestern states. It affords an unusual opportunity for the discussion of problems of mutual interest and concern to the doctors in those states.

Eighty-five of the sturdiest of the group enjoyed a hearty and tasty breakfast together in the Terrace Gardens of the Lowry Hotel. The formal program began at 9:30 A. M., and from then on the attendance increased until a total of about one hundred and fifty was reached—a record attendance for this conference group. The morning program sounded the keynote of the times and

was devoted to a discussion of various phases of medical economic problems: the problem of medical care for the indigent and the unemployed; sickness insurance; medical journal advertising; the oversupply of physicians, etc. At noon the Minnesota State Medical Association was host to the entire delegation at a delightful dinner. Following dinner, the program dealt with a variety of interesting subjects—national and local legislation, basic science laws, postgraduate medical education and medical exhibits. Each individual on the program made a contribution of definite interest and value. Every talk showed thoughtful preparation, was ably presented and evoked pertinent discussion.

Upon the conclusion of the program at 5:00 P. M., a short business meeting was held. Officers for the 1936 conference were elected, with Oliver J. Fay, M.D., of Des Moines, Iowa, as president and E. S. Hamilton, M.D., of Kankakee, Illinois, as secretary. Chicago, Illinois, was selected for next year's meeting place. Tentative plans point to the middle of February as the date for the 1936 Northwest Medical Conference but the definite details of the meeting will be arranged by the newly elected officers.

A complete copy of the program is given below in order to emphasize the type of subjects and men who appear on this Northwest Medical Conference program.

Opening Remarks—Philip H. Kreuscher, M.D., Chicago, President.

The Problem of Medical Care:

For the Indigent—E. M. Farr, M.D., Billings, Montana.

Discussion—Rolland Greene, M.D., Peoria, Illinois.

For the Unemployed—Charles M. Phifer, M.D., Chicago, Illinois.

Open Discussion

Sickness Insurance—Mr. A. M. Simons, Bureau of Medical Economics, American Medical Association.

Discussion—Gordon F. Harkness, M.D., Davenport, Iowa.

Medical Journal Advertising—Mr. Harvey Sethman, Denver, Colorado.

The New Set-up of the State Board of Health of Indiana—Thurman B. Rice, M.D., Indianapolis, Indiana.

Luncheon—12:30 P. M.  
Spanish Room

Medical Legislation:

National—F. S. Crockett, M.D., LaFayette, Indiana.

Discussion—C. B. Wright, M.D., Minneapolis, Minnesota.

Local—R. L. Sensenich, M.D., South Bend, Indiana.

Discussion—John R. Neal, M.D., Springfield, Illinois.

Survey of Basic Science Laws—W. G. Magee, M.D., Watertown, South Dakota.

Discussion—L. W. Larson, M.D., Bismarck, South Dakota.

Postgraduate Medical Education—D. J. Glomset, M.D., Des Moines, Iowa.

Discussion—Gunnar Gunderson, M.D., La Crosse Wisconsin.

Medical Exhibits:

Scientific—W. A. O'Brien, M.D., Minneapolis, Minnesota.

Discussion—Mr. George Crownhart, Madison, Wisconsin; Thomas A. Burcham, M.D., Des Moines, Iowa.

Commercial—Harold Camp, M.D., Monmouth, Illinois.

Discussion—J. D. McCarthy, M.D., Omaha, Nebraska.

#### PROFESSIONAL MEDICAL SERVICES NOT SUBJECT TO CODES OR ASSESSMENTS

A letter addressed to "oculists and physicians dispensing ophthalmic products" has recently been written by the Optical Retail Trade Code Authority, Seven East Forty-fourth street, New York City. The letter alleges that "physicians selling glasses or servicing prescriptions" come fully within the scope of the optical retail code. The letter has been accompanied or followed by a demand that the physician fill out a questionnaire relative to the nature and extent of the physician's optical business, and pay assessments amounting to \$3.00 for each employee in his service. The assessment is for the support of the Optical Retail Trade Code Authority, a trade organization.

Information has come from the Bureau of Legal Medicine and Legislation of the American Medical Association that they have protested against this attempt to bring ophthalmologists within the scope of the National Industrial Recovery Act, which does not purport in any way to regulate or control the practice of medicine. Pending the adjustments of these protests, the American Medical Association advises physicians who are engaged in strictly professional work to refrain from answering the questionnaires sent to them, and to refrain from paying the solicited assessment for the support of the Optical Retail Trade Code Authority. The outcome of the protest will be reported in the *Journal of the American Medical Association*, and in the *JOURNAL OF THE IOWA STATE MEDICAL SOCIETY* at an early date.



# SPEAKERS BUREAU ACTIVITIES

## LABORATORY COURSE

During the past ten years there has been great activity in the field of laboratory medicine, and as a result the Speakers Bureau Committee feels that a course in the evaluation of laboratory tests might be welcomed by the medical profession. Iowa men would be utilized as far as possible for such a course.

The aim would be to stress laboratory procedures which can and should be employed by the general practitioner, and to give an evaluation of such procedures, as well as an evaluation of those laboratory tests which the average doctor does not make because of lack of equipment or training. The outline given below is tentative, but presents a picture of another step toward better medical education in Iowa.

This course can be supplied to several communities this spring. Any group of physicians interested in having such a course may obtain further information by writing to the Speakers Bureau.

### 1. HEMATOLOGY

One Hour Demonstration of the following:

- Making of a slide and smear
- Red and white blood counts
- Hemoglobin
- Differential count
- Sedimentation tests
- Coagulation tests
- Blood typing and grouping

One Hour Clinical Discussion of above.

### 2. IMMUNOLOGY OF THE BLOOD

One Hour Demonstration of the following:

- Pneumococcus grouping
- Kahn's test
- Agglutination test
- Schick test
- Allergy tests

One Hour Clinical Discussion of above.

### 3. BLOOD CHEMISTRY

One Hour Demonstration of the following:

- Blood sugars
- Blood ureas

One Hour Clinical Discussion of above.

### 4. URINALYSIS

One Hour Demonstration of the following:

- Routine urinalysis
- Kidney function tests

One Hour Discussion of above.

### 5. BACTERIOLOGY

One Hour Demonstration of the following:

- Tuberculosis
- Diphtheria
- Gonococcus
- Pneumococcus
- Typhoid fever
- Simple bacteriologic stains

One Hour Discussion of above.

### 6. STOOL AND GASTRIC ANALYSIS

- One Hour Demonstration
- One Hour Evaluation

### 7. TISSUE EXAMINATION—METABOLISM

One session

### 8. ELECTROCARDIOGRAPHY

One Hour Clinical Demonstration

One Hour Discussion

### 9. & 10. PRACTICAL DEMONSTRATION OF X-RAY AND DIAGNOSIS OF FILMS

Two sessions

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## CLINIC COURSE

Below is given a tentative outline of a sample clinic which the Speakers Bureau Committee is now in a position to offer. Similar courses covering diseases of the brain and spinal cord, the nervous system, genito-urinary tract, diseases of the bone, diseases of metabolism, and so forth, are now available to any community having the necessary hospital facilities for these clinics. Write to the Speakers Bureau Committee if you are interested.

### GASTRO-INTESTINAL

1. Peptic Ulcer (Given by one internist and one surgeon)

- a. Medical aspects
- b. Surgical aspects

2. Diseases of the Stomach and Intestines (Two internists)

- a. Gastric and intestinal neuroses
- b. Organic diseases of the stomach and intestines

3. Diseases of the Gallbladder and Liver (Surgeon and internist)

- a. Medical aspects
- b. Surgical aspects

4. Tumors of the Gastro-intestinal Tract (Pathologist and surgeon)

- a. Morphology and location of tumors
- b. Surgical diagnosis and treatment

5. Roentgenologic Therapy of the Gastro-intestinal Tract

- a. Diagnosis
- b. Treatment

6. Gastro-intestinal Phases of Systemic Diseases (Two internists)

7. Abdominal Distress (Diagnostic Clinic with surgeon and internist)

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## RADIO SCHEDULE

WOI, Ames, Wednesday at 4 P. M.

WSUI, Iowa City, Monday at 8 P. M.

March 6—The Pituitary Gland

Joseph Brown, M.D.

March 13—Focal Infections—How They Disturb Us

D. J. Glomset, M.D.

March 20—Hand Infections

R. R. Harris, M.D.

March 27—Depression Nerves

F. A. Ely, M.D.

April 3—Poisons in Our Every Day Life

R. L. Parker, M.D.

## SOCIETY PROCEEDINGS

### Allamakee County Annual Meeting

Dr. J. W. Thornton of Lansing was elected president of the Allamakee County Medical Society at the annual meeting held in Postville, Sunday, February 3. Other officers include Dr. R. R. Jeffries of Waukon, vice president; and Dr. M. E. Kallman of Postville, secretary and treasurer. The society was entertained by Dr. and Mrs. Kallman.

### Cass-Audubon Societies

Members of the Cass and Audubon County Medical Societies met in joint session at the Hotel Whitney in Atlantic, Wednesday, February 27. The following program was presented by Council Bluffs physicians: Sterility, C. A. Hill, M.D.; Tuberculous Conditions of the Skin, G. R. McCutchan, M.D.; Intestinal Obstruction Secondary to Acute Infections, M. E. O'Keefe, M.D.; and Apparently Simple Infections Causing Grave Complications, A. A. Johnson, M.D.

### Cerro Gordo County

Three physicians from Bremer County were guest speakers for the meeting of the Cerro Gordo County Medical Society held in Mason City, Tuesday, February 12. L. D. Jay, M.D., of Waverly, spoke on Surgical Pathology of the Kidney; Paul J. Amlie, M.D., of Tripoli, addressed the group on The Effect of Maternal Physical Development on Labor; and M. N. Gernsey, M.D., of Waverly, discussed Pre-eclampsia and Eclampsia.

### Cherokee County

The regular monthly meeting of the Cherokee County Medical Society was held at the state hospital in Cherokee, Monday, February 25. Leonard P. Ristine, M.D., superintendent, spoke on Cases of Dementia Praecox.

### Clarke County

The program of the Clarke County Medical Society's meeting held in Osceola, Tuesday, February 5, was as follows: Management of Head Injuries, J. L. Stech, M.D., of Council Bluffs; Management of Diarrhea in Infants, Isaac Sternhill, M.D., also of Council Bluffs; and The Basic Science Law, James E. Dyson, M.D., of Des Moines. There were several visitors present from adjacent counties. The papers were timely, well delivered, and were not only thought-provoking, but enjoyable.

J. N. Goodman, M.D., Secretary.

### Clay County Annual Meeting

Dr. E. E. Munger of Spencer was elected president of the Clay County Medical Society at a meeting held in Spencer, Thursday, February 14. Dr. Dean

King of Spencer was named vice president, and Dr. C. C. Collester of Spencer, secretary and treasurer.

### Dubuque County

Tuesday, February 12, the regular meeting of the Dubuque County Medical Society was held in Dubuque at the Elks Club Building. Felix A. Hennessy, M.D., of Calmar, Councilor of the First District, gave an interesting paper, and illustrated statistics on The Cancer Survey in Iowa. H. A. Stribley, M.D., of Dubuque, presented an unusual paper on Pharmacopoeial versus Proprietary Drugs. The meeting was preceded by a six-thirty steak dinner. Plans are being formulated for the inter-professional group organization. At the regular March meeting, Dr. Gordon F. Harkness of Davenport, and Dr. Arthur W. Erskine of Cedar Rapids, will be guest speakers.

D. F. Ward, M.D., Secretary.

### Fremont County Annual Meeting

The Fremont County Medical Society held a six-thirty dinner meeting Wednesday, February 13, in Hamburg, with Drs. A. E. and A. R. Wanamaker as hosts. After the dinner the following program was presented: Tumors of the Breast, Herbert H. Davis, M.D., assistant professor of surgery, University of Nebraska, College of Medicine; Version and Breech Extraction, Willis H. Taylor, M.D., associate professor of obstetrics, University of Nebraska, College of Medicine; and Common Lesions about the Mouth and Mucous Membranes, Donald J. Wilson, M.D., of Omaha. These fine papers were illustrated with lantern slides. Election of officers for the present year resulted as follows: Dr. Harold P. Cole of Thurman, president; Dr. G. L. Roark of Tabor, vice president; Dr. A. E. Wanamaker of Hamburg, secretary and treasurer; Dr. Wanamaker, also delegate; and Dr. R. C. Danley of Hamburg, alternate delegate.

A. E. Wanamaker, M.D., Secretary.

### Hardin County

Herbert W. Rathe, M.D., of Waverly, addressed the Hardin County Medical Society, at a meeting held in Eldora, Tuesday, February 26, on The Modern Treatment of Lobar Pneumonia.

### Johnson County

The Johnson County Medical Society at its regular meeting Wednesday, February 6, placed itself on record as favoring the idea that federal or state participation in problems involving medical care should be considered by and developed under the guidance of organized medicine.

Albert V. Hardy, M.D., associate professor in hygiene and preventive medicine, reported some of the results of an investigation of the recent Chicago epidemic of amebic dysentery, made by a special



commission of which he was a member. It was an extremely interesting and instructive address.

H. M. Korns, M.D., Secretary.

#### Linn County

The next meeting of the Linn County Medical Society will be held Wednesday, March 13, in Cedar Rapids, with Emil Novak, M.D., associate professor of obstetrics, University of Maryland, School of Medicine and College of Physicians and Surgeons, as the guest speaker. Dr. Novak will speak on The Functional Disorders of Menstruation.

#### Madison County

Two Des Moines physicians furnished the scientific program for the Madison County Medical Society at its meeting held in Winterset, Monday, February 11. Robert L. Parker, M.D., spoke on County Contracts, and H. C. Willett, M.D., presented a paper on Verrucosis.

#### Marion County

Members of the Marion County Medical Society met at Pleasantville, Tuesday, February 26, and the following symposium on The Art of Medicine—Non-scientific, was presented: Things I Have Learned, and Things I Have Unlearned in General Practice, Gail A. McClure, M.D., of Bussey; The Preschool Child, Its Proper Care, H. L. Bridgeman, M.D., of Knoxville; School and Parental Contacts in the Care of School Children, C. S. Cornell, M.D., of Knoxville; School and College Athletics and the Cults, H. E. White, M.D., of Knoxville; Summary of the Symposium, Tom B. Throckmorton, M.D., of Des Moines.

E. C. McClure, M.D., Secretary.

#### Scott County

Kellogg Speed, M.D., of Chicago, was guest speaker for the Scott County Medical Society at its meeting held in Davenport, Tuesday, February 5, taking as his subject, The Treatment of Fractures.

#### Tama County

The Tama County Medical Society held a dinner meeting at the Sac and Fox Sanatorium, Friday, February 8, with Dr. and Mrs. Ira D. Nelson as hosts. John H. Peck, M.D., of Des Moines, was the speaker of the evening. Dr. Peck spoke on The Diagnosis of Tuberculosis, using the sanatorium x-ray charts and patients as clinical material.

#### Warren County

Tuesday, February 26, members of the Warren County Medical Society met in Indianola, for a dinner and scientific program. Speakers were: B. B. Parker, M.D., of Allerton, who addressed the group on Intestinal Obstruction; J. E. McFarland, M.D., of Leon, who discussed Stimulative Therapy; and B. S. Walker, M.D., of Corydon, who spoke on The Significance of Fever.

#### Woodbury County

The regular monthly meeting of the Woodbury County Medical Society was held in Sioux City at the West Hotel, Thursday, February 21. The scientific program was furnished by L. P. Ristine, M.D., superintendent of the Cherokee State Hospital at Cherokee. The subject of his paper was Physical-Mental Relationship in Illness.

R. N. Larimer, M.D., Secretary.

#### Southwestern Iowa Postgraduate Society

Members of the Southwestern Iowa Postgraduate Society met at the Delmonico Hotel in Shenandoah, Wednesday, February 13, for the following program: Diagnosis of Rare Back Injuries, H. Winnett Orr, M.D., of Lincoln, Nebraska; Problems in Prostatic Disease, A. D. Munger, M.D., also of Lincoln, Nebraska; and The True Surgery of Gas Gangrene Infection, E. J. Gottsch, M.D., of Shenandoah.

### INTERESTING NEWS

#### In Brief

It has been authoritatively stated that 71 per cent of the medical students in Russia are women.

An investigation reveals that during 1933 nine officers and forty-eight men in the United States Army committed suicide.

Antagonistic to the growth-promoting factor of certain hormones of the thymus glands are the growth-depressing hormones of the pineal glands.

Said to be the result of an accidental injury to the pituitary body, a young Egyptian during the past year has grown from normal height to a height of nine feet.

From the University of Amsterdam comes the report that tetany is successfully treated with a chemical fraction of irradiated ergosterol, or Vitamin D, known as "A. T. 10."

Berne University Foundation for the advancement of research on encephalitis has announced a prize of 1,000 Swiss francs for the best work during the past year in this field.

A recent survey indicates that there are more than one hundred thousand school children in the United States who stammer and nearly three million children who are totally or partially deaf.

Consoling, perhaps, to the inebriate is the report from the Thorndyke Memorial Laboratory of Boston that alcoholic neuritis is not the direct result of alcoholism, but is due to starvation.

A survey shows that the German eugenics sterilization law will affect three hundred and sixty thousand persons having mental or nervous diseases and about forty thousand more of the criminal class.

Multiple births may depend upon racial characteristics, as suggested by a comparison of twins born in the United States and in Denmark. In the former twins occur once in eighty-seven births, while in the latter they occur once in about sixty-three births.

Synthetic Vitamin C, known chemically as ascorbic acid, has been successfully employed in the treatment of pyorrhea, in non-hereditary type of hemophilia, and in certain forms of hemorrhagic nephritis. None of these three conditions had previously been ascribed to a vitamin deficiency.

Since its classical description as a disease entity in 1861, Ménière's Disease has not been successfully treated, except by complete section of the auditory nerve with resulting deafness, until Dr. Walter Edward Dandy, of Johns Hopkins University, recently discovered a method of selecting and sectioning only those nerve fibers which control equilibrium without injury to the fibers of audition.

From a statistical study which indicates that carcinoma of the breast is more frequent in unmarried women, or in married women having no children, than in mothers of large families, a California research investigator assumes that cholesterol, normally present in the ducts of the breast, undergo chemical changes from stagnation, chemically irritating the tissues as does coal tar, and resulting in the production of cancer.

#### PERSONAL MENTION

Dr. W. A. Sternberg of Mt. Pleasant has been appointed to the State Board of Health, to fill the vacancy created by the resignation of Dr. Nathaniel M. McKitterick of Burlington.

Dr. Charles B. Taylor of Ottumwa has recently announced his retirement from active practice of his profession. He and Mrs. Taylor are planning to leave Ottumwa in March to make their new home in San Antonio Heights, near Upland, California.

Dr. Arthur Steindler of Iowa City presented the final lecture in the series of Community Hospital Lectures on health, sponsored by Grinnell hospital officials. Dr. Steindler delivered an illustrated lecture on "Infantile Paralysis," to a large audience in the Congregational Church in Grinnell.

Dr. Otho C. Buxton, Jr., son of Dr. and Mrs. O. C. Buxton, plans to located in Webster City, where he will associate himself with his father, who has practiced medicine in Webster City for the past thirty-one years. Dr. Buxton, Jr., was graduated from the University of Iowa, College of Medicine in 1933, and for the past two years has been taking postgraduate work in St. Joseph's Mercy Hospital in Detroit.

Dr. Glenn C. Blome of Ottumwa spoke on "Cancer" at the local Y's Men's Club, Tuesday, February 5.

Dr. A. E. Putz, formerly of Iowa City, has located in Stanhope, where he will occupy the offices of Dr. E. F. Rambo, now practicing in Webster City.

Dr. A. L. Braden of Wellman announces the association of Dr. C. C. Rasmussen with him in the practice of medicine and surgery. Dr. Rasmussen was graduated from Northwestern University College of Medicine in 1925. He comes to Wellman from Fertile, Minnesota, where he has been engaged in surgical work in the hospital for the past five years.

Dr. Ray A. Fox of Charles City was the principal speaker for the meeting of the directors of the Sumner Community Club, held in Sumner, Thursday, February 28. Dr. Fox spoke on "The Human Body and Practical Health Points."

Dr. W. B. Phillips of What Cheer is leaving that city to take special work in dermatology at the New York Polyclinic Hospital. His office and equipment will be taken over by Dr. A. B. Dixon, who has practiced in Lawler during the past five years.

Dr. R. H. McBride of Sioux City spoke on "Contagious Diseases, the Common Cold and Its Sequelae," at a meeting held in Alton, Friday, February 8, sponsored by the Child Welfare Department of the Woman's Club.

#### MARRIAGES

Miss Selma Falkenberg of Cedar Falls and Dr. A. L. Nelson of Winterset were married at the home of the bride's mother, Sunday, February 24. After a week's wedding trip, Dr. and Mrs. Nelson will be at home in Winterset, where Dr. Nelson has been practicing medicine for the past four years.

#### DEATH NOTICES

Brown, Foster Victor, of Sioux City, aged fifty-six, died February 14, following a three months' illness. He was graduated in 1905 from the Sioux City College of Medicine, and at the time of his death was a member of the Woodbury County Medical Society.

Kepler, John Clarence, of Kirkville, aged fifty-seven, died suddenly February 17, after suffering a stroke. He was graduated in 1905 from Keokuk Medical College, College of Physicians and Surgeons, and at the time of his death was a member of the Wapello County Medical Society.

Meyers, Jacob Franklin, of Elliott, aged fifty-six, died February 23, as the result of a malignant condition. He was graduated in 1903 from the State University of Iowa, College of Medicine, and had long been a member of the Montgomery County Medical Society.



# HISTORY OF MEDICINE IN IOWA

*Edited by the Historical Committee*

\*DR. HENRY B. YOUNG, Burlington  
DR. FRANK M. FULLER, Keokuk  
DR. JOHN T. MCCLINTOCK, Iowa City

\* Deceased

DR. TOM. B. THROCKMORTON, Des Moines  
DR. WALTER L. BIERRING, Des Moines  
DR. WILLIAM JEPSON, Sioux City

## A History of Medicine in Jefferson County, Iowa

JAMES FREDERIC CLARKE, M.D., F.A.C.S., Fairfield

(Continued from last month)

### MEDICAL PRACTICE IN 1852

Because the material at hand is so complete and unique, it seems worthwhile to present, *in extenso*, Dr. Shaffer's description of the methods of practice in the 1850's and later.

In August, 1852, Dr. Shaffer ordered for Mrs. S. a "hot pedularium stimulated with red pepper," and gave her six c. c. pills at one dose. Dr. Shaffer rode thirty-four miles on this Sunday on professional calls. He writes in the evening: "This Sunday was spent in the practice of my profession and though prevented from meeting with my friends in the church, yet my spirit often communed with my Savior. Get to bed at 12:00 o'clock some fatigued but pleased with the reflection that I was not altogether useless for the day." This private record reveals the fine spirit of this good man. In the light of the knowledge of today, we doctors may think that many of these weary hours of the 1852 doctor's labor were "altogether useless." How will it be eighty years from today? The doctors of the year 2013 may know that our most earnest efforts were of little avail.

September 8, Dr. Shaffer gave Mr. A. a "big dose of rhubarb, calomel and soda," and later "eighteen grains of quinine and twenty-four grains of Dover's powder." The next day Mr. A. was up at the table and eating well. Evidently this patient had tertian malaria, but here as throughout this diary, there is an amazing failure to differentiate the fevers then so prevalent. Drake's "Diseases of the Mississippi Valley" published in 1850 shows the same confusion of all the fevers of that time.

September 26, Dr. Shaffer had a patient who was about to die. To show the doctor's religious solicitude we quote his diary: "I told him he must

die in all probability and urged upon him the necessity of seeking the preparation of the gospel, but all he said was: 'If I must die, Doc, make my death as easy as you can, but do not give me anything to cloud my mind.'"

On one occasion Dr. Shaffer was called to Isaac King's at Bushes Mill nine miles from Fairfield. Isaac had become sick at midnight with severe pain in the bowels. From the description we would diagnose the case as one of acute appendicitis. Before the doctor's arrival Mr. King had taken "a cup of spirits of camphor, a dose of castor oil, a teaspoonful of spirits of turpentine, and a teaspoonful of Bateman's drops." On his abdomen was "a big bag of roots" made hot and wet—a poultice that had been left on a former occasion by Dr. Ream. Dr. Shaffer ordered "hot applications to the feet, mustard to the belly and a powder of calomel, opium and ipecac" by mouth. "The calomel to purge, the opium to relax the spasm and thus aid the calomel, the ipecac to modify the stimulant effects of the opium and to direct to the skin."

Dr. Ochsner would certainly have pitied poor Isaac King and would have considered his recovery hopeless after this treatment. Incidentally, the faith of the people in drugs is shown by the preservation of Dr. Ream's bag of roots "from a former occasion" to be reheated for the poultice. The final outcome of Mr. King's illness is not recorded in the diary. He may have survived the cup full of spirits of camphor and castor oil and all the other drugs. Miracles happen in every age.

December 23, 1852. Dr. Shaffer himself had a severe pain in the side. A neighbor called at 2:00 A. M. and bled him. "About a quart or

more." This blood was examined and here is recorded a typical blood examination of 1852: "The blood was neither sized, buffed or cupped but did not have quite as much serum as in health." The doctor took two grains of calomel and  $\frac{1}{4}$  grain each of opium and ipecac every two hours and at 8:00 A. M., castor oil. He recovered.

The clinical examination of the urine or of the blood in 1855 was not a routine procedure. Dr. Shaffer remarks of one specimen of urine that it was "very good to appearance." No tests were made. In other cases however he did examine for albumin by mixing the urine with nitric acid and boiling. On another occasion the doctor says "I hinted at the probability of Bright's disease and sent for a bottle of his urine. On the application of heat it made no cloudiness, to nitric acid it yielded a copious white precipitate which was not redissolved by heat." As to blood examinations they were confined to the physical appearances of the gross specimens removed by phlebotomy. There was no counting of cells. In all Dr. Shaffer's patients from 1852 to 1860 there were but two instances where the diagnosis was "Anaemia" and how these diagnoses were made we do not know.

In October, 1852, Dr. Shaffer tells us that the business of Huey and Shaffer for September was \$190.00 and he adds that this was "good." Dr. Shaffer's income for the month was \$47.50 and he calls this "good." As against this may we quote a few items of his expense accounts to compare with our day. "Stopped for dinner. Dinner and feed for two horses, 35c. The livery man charged me two dollars for a horse and buggy—told him this was too much but paid it." These were items in 1854: "Pants \$3.75; socks 25c; hat \$2.00; knife \$1.75; brandy \$7.00; coat \$15.00; cap 75c; cravat \$2.50; gold watch \$150.00." That was a fine watch for a young doctor and a \$2.50 cravat must have been extravagant for a small town physician.

This is Dr. Shaffer's summary of his practice for 1852 (from May to December). He traveled professionally 689 miles. He saw 155 patients. He read 4770 pages of medicine. He was sick only one day. He wrote 109 letters and received 94 letters. His personal income was \$735.00 and his expenses were \$270.00. This left a net income for eight months of \$465.00. His largest single fee was \$3.00. He notes that there were in Fairfield at that time the following doctors: Mohr, Clarke, Oliver, Woods, Ware, Hurst, Hufford, and Shaffer. Fairfield had a population of about 1,000 at that time.

In the latter part of 1853 Dr. Shaffer complains that "business is very dull." He remarks: "I

have made a post mortem examination." This was probably the first such examination made in Jefferson County. From stray notes we learn that, for the next few years, \$12.00 a day was a noteworthy income for a Jefferson County doctor and thirty miles was a long day's travel on country calls.

#### SURGERY IN THE 1850'S

Surgery in the 1850's and 60's was a serious business in Jefferson County, Iowa. Few operations were done. Most wounds became infected and the death rate from accidental wounds was high. A transcript of a few surgical cases pictures the conditions.

April, 1854. "A farmer of good constitution, strictly temperate habits and independent living, consulted me in relation to a tumor of the scrotum. He gave the following history: About six years ago he was kicked by a young horse, above the groin. Some slight pain ensued which lasted for a few days but did not prevent him from working. Slight swelling ensued which gradually kept increasing for three years. He then showed it to Dr. Stark<sup>173</sup> who pronounced it sarcocele or malignant testicle and advised castration. During the past three years has increased very much in size, no pain but sense of weight, dragging or inconvenience is experienced. Swelling commenced at the lowest part of the scrotum and increased upward. On inspection found a large elastic tumor on right side of septum scroti covered by borrowed integument. Fluctuation, indistinct; no transparency; swelling extending to the internal ring; softer above where cord could be distinctly felt. No impulse on coughing. Pronounced it hydrocele and described to the patient its nature and the operation necessary for a cure. In the meantime I asked a week or so to study on the case. He was next examined by Dr. Stark who pronounced it scirrhus of the testicle; next Dr. Steele,<sup>174</sup> who on cursory examination coincided with him; next Professor Sanford of Keokuk examined it in my office and was entirely positive that it did not contain a drop of water, and said, 'cut through the tumor and it will be perfectly solid.' In this difference I desired that puncture be first performed and if it should be scirrhus, why then castrate if proper. This morning at 10:30 o'clock Dr. Steele in the presence of Dr. Stark and myself punctured the tumor with a trochar and canula and evacuated thirteen fluid ounces of straw-colored liquid, then injected with pure port wine. Patient pained and fainted; drew off wine and put to bed; sick one-half hour with some nausea; slight cramp; disagreeable smarting in scrotum. Visit again in evening. Patient passed a good day, pulse 72. Patient easy and



comfortable at 8:00 o'clock p. m. On the application of heat the fluid evacuated was converted almost entirely into albumin. Sealed four ounces and put away. 12th. Patient comfortable, some slight swelling, just enough. 13th. Pulse 64; no operation of the bowels for four days; gave a dose of salts." This patient recovered, but nine months later the fluid returned and Dr. Shaffer repeated the operation.

Today we consider this 1854 case history "much ado about nothing;" but then with no thermometer or asepsis, all operations were grave. Had there been a hypodermic syringe the doctor could, in a minute, have made a positive diagnosis. The remarkable statement in all this was "No operation of the bowels for four days." This in that day of purgatives!

Simple wounds were serious in 1855. "George Crosby was bitten by a bear. It gave the appearance of a poisoned wound; laid on a cloth covered with stramonium ointment and strapped it down tight." After a somewhat stormy period this man recovered.

The word erysipelas was used commonly for many inflammations. For "phlegmonous erysipelas" of the neck Dr. Shaffer used "Sharp's liniment." In another case he used calomel freely "to salivate the case as speedily as possible to prevent the disorganizing effect of inflammation."

A man presented himself, with a hay knife wound of the leg. The edges of the wound had been drawn together with four sutures by another doctor. Dr. Shaffer found the wound "hard and sanuous discharge." He removed the sutures but drew the edges together with adhesive and gave morphine and compound cathartic pills. "I did not bleed for the pulse was 112, hard and irritable." This man finally died.

In April, 1865, Drs. Steele, Shaffer and Cook<sup>37</sup> amputated a finger and although "Dr. Steele did a fine operation," later there was "a big slough of the tissues" and a long stormy recovery.

One more case is worthy of our attention in showing the contrast of the management at that time with the treatment of today. On June 22, 1865, Johnny Harris had a spinal disease. Dr. Shaffer says: "It is described as caries vertebrae," and he thus gives his treatment:

"Put on a spot of emplastrum cantharides as large as a dinner plate, with a strip of adhesive and so applied it that I might get a denuded surface on each side of the spine; operated nicely; opened blisters; peeled off loose skin and reapplied; caused some discharge of pus.

24th. Placed a glass bead on the blistered surface; patient complained; however, I strapped it down tight.

25th. Visited Harris boy; no good; put a piece of wood instead of bead, which falls out.

26th. Applied blister.

27th. Applied sulphate of zinc as an escharotic; cried some.

July 1st. Strapped a pair of glass beads in the cavity left by eschar; complained a good deal.

4th. Bead embedded, took away with dressing; dressed with unguentum cantharides.

6th. Again applied beads for an issue. Gave Brother Harris a bonus of \$45 to go to Chicago and purchase withal a suitable instrument for the support of the aforesaid back. Hope it will be efficient in its cure and cause a thorough restoration of the boy to health.

23rd. Boy much better; find the irritating plaster causes much healthy pus."

Johnny Harris, son of the minister, recovered; with how much deformity we cannot learn. How one's heart aches for this boy and all the Johnnies who through these years, suffered the tortures of the orthodox treatment for tuberculosis of the spine. Whether the \$45 "bonus" was from the church or from the doctor himself we are not sure, but knowing his kindness in so many other cases we believe that Dr. Shaffer himself purchased the splint. The splint, of course, effected the cure in spite of the blisters and beads and blocks of wood. Thankful indeed should be those whose childhood fell in a later age than that of Johnny Harris. The great medical profession in its sweep down through the ages has done more for the world than any other learned group of men but contemplated in retrospect many points in this journey of the centuries present pictures now incomprehensible.

A stray note here and there in Dr. Shaffer's diary sheds more light on the medicine of this period. He and his colleagues considered tuberculosis hereditary. Heart disease was from "transmitted rheumatism." In babies' illnesses "the blood is the prime source of all mischief." Today we consider the stomach the center of all the storms. They blistered the nape of the neck for apoplexy. Dr. Shaffer once gave a four-year-old child twenty grains of quinine in one dose.

Dr. Shaffer leaves a record of every case treated from May 15, 1852, to December 31, 1854. He had 931 separate cases. Of these 20 per cent were "remittant fever," 4.5 per cent dysentery, while diarrhea, "lientery" and "irritation of the bowels" composed 6.8 per cent. The reader of this journal wonders how diarrhea could be recognized when there was in the treatment of all cases such a free use of purgatives. "Intermittant" "internal fever," "tertian," "internal fever quartan," "irregular intermittant," and "irregular dumb quartan" composed 5.7 per cent of 53 cases. The reading of

this alone pictures the confusion of diagnoses due to the lack of the clinical thermometer. There were recorded only two cases of "typhoid fever" in all this thousand. Was this the beginning of a differentiation?

The doctor had 318 cases of the above fevers, one-third of all the cases treated. Among them were a number of cases of unrecognized appendicitis. In addition to the above he records the diagnoses: "pernicious fever," "fever," "ague" (one case only), "catarrhal fever" and "inflammation of the bowels." In all his cases the doctor made 150 separate diagnoses. He had twenty-four cases of pulmonary tuberculosis, many more than any one of us has today in a like period. In addition there were nineteen cases of "bronchitis," part of which may have been tubercular. He had fifteen cases of "dyspepsia," forty-two of "conjunctivitis," and "hysteria" and "catarrh" were quite common. Later in Fairfield, Mrs. Dr. Keck made and bottled a catarrhal cure, the sale of which made the doctor wealthy even if it did not cure her patients.

"Chylopoietic derangement" seems to have been a favorite diagnosis in the '50's, and "whiskey" and "delerium tremens" are often mentioned. Smallpox was much more prevalent than today. From May 1, 1852, to December 3, 1863, Dr. Shaffer records 76 deaths (not complete for all Jefferson county). Of these deaths there were:

Contagious diseases of childhood.....	23
Diseases of the chest and lungs.....	12
Diseases of the alimentary tract.....	22
Diseases of the nervous system.....	9
Accidents .....	2
Diseases of the kidneys.....	2
Miscellaneous .....	6

A number of deaths in groups other than the first were of children. It has only been since 1910 that we have learned to save children from "cholera infantum" and a large factor has been the improvement of the nursing bottle.

Not a single note of gall stone colic is found in all Dr. Shaffer's records and very little is said of puerperal fever and of diseases of the kidneys, all of which must have been prevalent but unrecognized. A few of the 1852 prescriptions are of interest.

#### "Ague Receipt"

℞ Elix, Vitriol, f. oz.  $\frac{1}{4}$ .  
Quinine, dram i.  
Piperine, grs. vii.  
Salicine, 3 ozs.  
Brandy,  $\frac{1}{2}$  pint.

"Pop it down heavy"

#### "Cholera Infantum"

℞ Acet. Plumbi., grs. iv.

Sac. Alba., grs. iv.  
Pulv Ipecac, grs. iv.  
Hydrarg. Chlor., mit. grs. ii.  
Pulv. Doveri, grs. xiv.  
M. Div. in Chart No., viii.  
Three per day.

#### "Lapus Divinis"

℞ Aluminae et Potass Sulphas et.  
Cupri Acetas Aeq. p.

"Fuse by strong heat and pulverize. The fusing dispels the water of crystalization. Given me by a Hungarian surgeon who came to the office 'out of soap.' He says it is recommended by the most eminent oculists of the continent and of Europe in all cases of ophthalmia. Two, three or four grains to the ounce of aq. dest."

Any reader of this narrative who may be in Keokuk, Iowa, will be amply repaid if he spends a few hours in the Keokuk Library reading Dr. Shaffer's diary. It contains besides his medical notes one of the first weather records of Iowa and descriptions of his work as a taxidermist; running comments of a scholar on the philosophy of life; and through it all the romance of his life, more interesting than many a work of fiction.

(To be continued)

#### AN INTERNATIONAL MEETING

An announcement has just been made that from July 23 to July 27, inclusive, the International Congress on Life Insurance Medicine will meet in London, England. The medical directors of two American insurance companies will speak at the Congress. One, Dr. Chester T. Brown, medical director of the Prudential Insurance Company of America, will read a paper on the subject: "Methods of Estimating Risks," and Dr. Samuel B. Scholz, Jr., medical director of the Penn Mutual Life Insurance Company of Philadelphia, will present a paper on the subject: "The Rôle of Health Service in Life Insurance."

#### CANCER CURE VENDOR DIES WITH CANCER

Death, the grim reaper, is not swayed by idle boasts, reads no testimonials, and remains impassive to the death defying claims of quackery.

Charles W. Mixer, self-styled cancer specialist of Hastings, Michigan, is dead of cancer on the eve of his prosecution on charges of violating the Federal Food and Drugs Act. His principal medicine, "Mixer's Cancer and Scrofula Syrup," was composed of potassium iodide, senna, licorice, yellow dock root, sarsaparilla, wintergreen, glycerine, alcohol and sugar syrup, according to a report of its analysis by the Federal Food and Drug Inspectors.

A suit charging Mixer with violation of the Federal Food and Drugs Act was pending at the time of his death. His death terminates the government prosecution, but it appears highly ironical that his demise should have occurred from cancer, the object of his quackery.



# THE JOURNAL BOOK SHELF

## BOOKS RECEIVED

**ANNUAL REPORT OF THE SURGEON GENERAL OF THE PUBLIC HEALTH SERVICE OF THE UNITED STATES**—For the fiscal year, 1934. United States Government Printing Office, Washington, 1934. For sale by the Superintendent of Documents, Washington, D. C. Price, seventy-five cents.

**THE AUTONOMIC NERVOUS SYSTEM**—By Albert Kuntz, Ph.D., M.D., professor of micro-anatomy, St. Louis University School of Medicine. Second edition, greatly enlarged and thoroughly revised. Octavo of 697 pages, illustrated with 73 engravings. Lea & Febiger, Philadelphia, 1934. Price, \$7.50.

**BODY MECHANICS IN THE STUDY AND TREATMENT OF DISEASE**—By Joel E. Goldthwaite, M.D., Lloyd T. Brown, M.D., Loring T. Swaim, M.D., and John G. Kuhns, M.D. J. B. Lippincott Company, Philadelphia and London, 1935. Price, \$4.00.

**HOW TO PRACTICE MEDICINE**—By Henry W. Kemp, M.D., New York. Paul B. Hoeber, New York, 1935. Price, \$2.50.

**INTERNATIONAL CLINICS**—Volume IV, Forty-fourth Series. Edited by Louis Hamman, M.D., visiting physician, Johns Hopkins Hospital. J. B. Lippincott Company, Philadelphia and London, 1934. Price, \$3.00.

**MORTALITY AMONG PATIENTS WITH MENTAL DISEASE**—By Benjamin Malzberg, Ph.D., New York State Department of Mental Hygiene, Albany, New York. State Hospitals Press, Utica, New York, 1934.

**OBSERVATIONS OF A GENERAL PRACTITIONER**—By William N. Macartney, M.D. Richard G. Badger, Publisher, The Gorham Press, 100 Charles Street, Boston, Massachusetts.

**PERIODIC FERTILITY AND STERILITY IN WOMAN**—A Natural Method of Birth Control—By Professor Herman Knaus, head of the clinic for gynecology and obstetrics, of the German University of Prague. With 64 illustrations and 12 tables. Wilhelm Maudrich, Publisher, Vienna, 1934. Price, \$6.50.

**REPORT ON SEVENTH INTERNATIONAL CONGRESS OF MILITARY MEDICINE AND PHARMACY**—Held in Madrid, Spain, May-June, 1933. By Captain William Seaman Bainbridge, M.C.-F., U.S.N.R. George Banta Publishing Company, Menasha, Wisconsin, 1934.

**SURGICAL APPLIED ANATOMY**—By Sir Frederick Treves, Bart. Ninth edition, revised by C. C. Choyce, M.D., professor of surgery, University of London. Illustrated with 174 figures, including 66 in color. Lea & Febiger, Philadelphia, 1934. Price, \$4.00.

**THE YEAR BOOK OF GENERAL MEDICINE, 1934**—Edited by George F. Dick, M.D., Lawrason Brown, M.D., George R. Minot, M.D., William B. Castle, M.D., William D. Stroud, M.D., and George B. Eusterman, M.D. The Year Book Publishers, Inc., Chicago, 1934. Price, \$3.00.

**THE YEAR BOOK OF GENERAL SURGERY**—Edited by Evarts A. Graham, M.D., professor of surgery, Washington University School of Medicine. The Year Book Publishers, Inc., Chicago, 1934. Price, \$3.00.

## BOOK REVIEWS

### THE HEART VISIBLE

A Clinical Study in Cardiovascular Roentgenology in Health and Disease—By J. Polevski, M.D., attending physician and cardiologist, Newark Beth Israel Hospital, Newark, New Jersey. F. A. Davis Company, Philadelphia, 1934. Price, \$5.00.

This book introduces something very new and concise in the diagnosis of heart disease. The author spends a great deal of time first in describing the normal contours of the heart and the large vessels of the mediastinum as noted on fluoroscopy, and second, in clearly outlining a satisfactory mode of procedure in visualizing the various parts of the heart. This is followed by a complete description of the pathologic changes of the heart which manifest themselves on fluoroscopic examination.

The book emphasizes the importance of much practice in fluoroscopy before arriving at any definite conclusions about the type of lesion found, and also, which I think is very important, emphasizes the importance of a good history, complete physical examination, and auscultatory study of the heart even before a fluoroscopic study is attempted.

This book is well worthwhile if used wisely and in conjunction with other methods of diagnosis, but I would warn those who only occasionally perform fluoroscopic examinations to be very careful not to place too much confidence in a fluoroscopic study of the heart as far as an ultimate and concise diagnosis of the heart is concerned.

H. A. C.

### ALLERGY AND APPLIED IMMUNOLOGY

By Warren T. Vaughan, M.D., Richmond, Virginia. Second edition. C. V. Mosby Company, St. Louis, 1934. Price, \$5.00.

Dr. Vaughan has written this book primarily for the use of patients and as a reference manual for physicians. He traces the origin of studies in allergy from their beginnings which apparently started with Behring's epoch-making discovery of diphtheria antitoxin, although prior to this time some simple investigations had been undertaken with hay fever patients.

The reader is informed in non-technical language what allergy means, and how it is brought about. The physiology of the condition is discussed and its "modus operandi" clearly developed. This is especially apparent in the case of the asthmatic patient whose vagus system is not perfectly balanced by his sympathetic system so that a slight stimulation to the vagus promptly precipitates a paroxysm of muscle contraction and throws him into an attack of asthma. This Vaughan aptly refers to as the "trigger mechanism."

He believes that it is not the state of allergy, but a tendency to it which is hereditary. The number of substances which can produce allergy is almost infinite and it would seem that the vast majority of the human family react to some degree to some allergen at some time or other.

The author states that the allergic person has two methods of relief from his ailment: one to avoid the

offending allergen and the other to become desensitized to it. He provides exhaustive tables of hay fever producing plants, shrubs and trees in various parts of the United States, noting their pollinating and leafing dates, and also gives diet tables for a large number of food allergy patients.

Dr. Vaughan's recital of excerpts from some of his case records would serve to convince one that the allergist must be a man of infinite calm and at times be possessed of the patience of Job. He must also be a bit of a detective and a master of deductive reasoning.

The author lists a number of diseases which, while not actually allergic, have been found to have an allergic factor and which have yielded to desensitization treatment. The list is a full one and gives rise to the feeling that possibly this new field of medicine is destined to disrupt our present ideas on a number of things and, incidentally, to supply us with the correct answer to other problems which to date have baffled medical science.

The reviewer considers that Dr. Vaughan has produced an excellent book.

F. R. H.

#### INSTITUTIONAL CARE OF MENTAL PATIENTS IN THE UNITED STATES

By John Maurice Grimes, M.D., four years a staff member of the Council on Medical Education and Hospitals of the American Medical Association. Published and distributed by the author, 1816 North Clark Street, Chicago, Illinois, 1934. Price, \$3.00.

In 1931 the American Medical Association appointed a council, of which Dr. Grimes was chairman, to investigate all hospitals caring for mental patients. The report as submitted by the author was not published by the Association, because "in the opinion of the council and an advisory committee of psychiatrists and neurologists his conclusions were not supported by the evidence presented."\* The author claims that "politics" submerged his report, and consequently published and distributed the book privately.

The report deals with both private and public institutions caring for epileptic, feeble-minded or insane individuals. While in private hospitals facilities are ample, beds abundant, and medical staffs adequate; among the public institutions, with but few exceptions, overcrowding is the rule, facilities are poor and the staffs are deficient. Some are classified as "insane asylums" instead of hospitals, but all Iowa institutions are in the "hospital" classification.

A major cause for overcrowding is the large influx of old people, who in an economically normal era would be cared for at home. The reviewer adds that the population increase in state institutions is brought on also by the diversion of patients to them from private hospitals as well as the retention of

borderline cases who in normal times would adjust themselves under home conditions.

This report, although without the approval of the American Medical Association, should prove of interest to the general medical man, sociologist and lawmaker. It suffers from being too general. A full report based upon set standards, and graded, such as that which the American Medical Association publishes for medical schools, is much needed.

M. S.

#### MANUAL OF CLINICAL LABORATORY METHODS

By Pauline S. Dimmitt, Ph.G., medical technologist, Stout Clinic, Sherman, Texas. Illustrated with 36 engravings, including seven full page colored plates. F. A. Davis Company, Philadelphia, 1934. Price, \$2.00.

By skillful selection the author has been able to include in this volume of 150 pages all of the usual laboratory procedures employed in routine laboratory work. She has eliminated technical discussions, and where several methods are recommended she has selected for inclusion in this work the one or two which have been demonstrated to be of greatest usefulness. Besides the usual urine and blood examinations the author has included the newer tests of proved value such as the liver function test, the examination of cerebral spinal fluid, the complement fixation and flocculation test for syphilis, the hormone test for pregnancy, and the various procedures in blood chemistry.

As a manual of methods in laboratory procedure this volume can be recommended without reservation.

#### MENTAL DEFECT

By Lionel S. Penrose, M.D., research medical officer, Royal Eastern Counties Institution, Colchester. Farrar and Rinehart, New York, 1934. Price, \$2.50.

The subject of mental subnormality has been discussed from many angles. Unfortunately for the development of the subject these discussions have largely stressed the sociologic and economic aspects of the problem. Dr. Penrose, while definitely stressing the sociologic aspect of the problem, has gone to great pains in his consideration of the biologic aspects of the subnormal individual, creating a background invaluable in the modern study of this problem.

In the early chapters of the book he outlines methods of investigation and classification of mentally defective individuals. Six chapters are devoted to the description of different types of persons who are likely to be certified mentally defective under the existing laws. The concluding chapter deals with the radical, palliative and preventive treatment of the mentally defective.

The broad viewpoint and modern treatment accorded this subject in this book should make it valuable alike for the layman and the physician who specializes in this field.

\* Jour. Am. Med. Assn., ciii:1457 (November 10) 1934.



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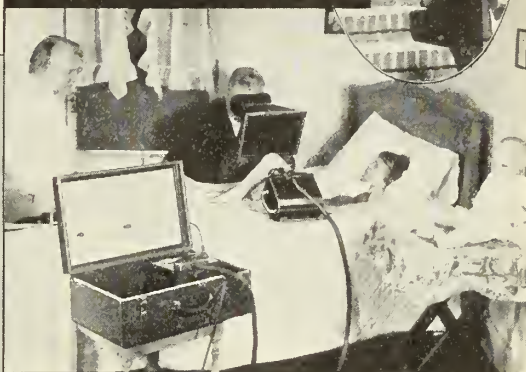
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Iowa State Medical Society

1934-1935





# The JOURNAL

of the

## Iowa State Medical Society

VOL. XXV

DES MOINES, IOWA, APRIL, 1935

No. 4

IOWA STATE MEDICAL SOCIETY

Organized in 1850

### Eighty-fourth Annual Session

Davenport, Iowa, May 8, 9, 10, 1935

Do not fail to Register. Registration Bureau—Masonic Temple



#### PROGRAM

Wednesday, May 8

8:30 a. m.

Gothic Room

Call to Order—

GORDON F. HARKNESS, M.D., President

Invocation—

DEAN PHILBROOK, Episcopal Cathedral, Davenport

Greetings—

MAYOR MERLE F. WELLS, Davenport

Address of Welcome—

MARTIN D. OTT, M.D., Davenport  
President, Scott County Medical Society

Symposium on Carcinoma of the Colon:

Diagnosis and Symptomatology—

ERNEST E. SHAW, M.D., Indianola, 8:45-9:00

X-ray—

CARL L. GILLIES, M.D., Iowa City, 9:05-9:20

Surgical Treatment—

N. BOYD ANDERSON, M.D., Des Moines, 9:25-9:45  
Discussion HAROLD E. GRAEBER, M.D., Fairfield  
HAROLD H. WEBB, M.D., Ottumwa  
FRANK W. FORDYCE, M.D., Des Moines  
9:45-10:00

Differential Diagnosis of Headaches—

THOMAS R. GITTINGS, M.D., Sioux City, 10:00-10:20  
Discussion CLARENCE E. VAN EPES, M.D., Iowa City  
CARYL L. NELSON, M.D., Waterloo, 10:20-10:30

Survey of Cesarean Sections in Iowa—

EVERETT D. PLASS, M.D., Iowa City, 10:30-10:50  
Discussion ROY E. CROWDER, M.D., Sioux City  
FLOYD W. RICE, M.D., Des Moines, 10:50-11:00

Amebiasis—

J. STUART MCQUISTON, M.D., Cedar Rapids, 11:00-11:20  
Discussion led by ALBERT V. HARDY, M.D., Iowa City 11:20-11:30

Presidential Address—

GORDON F. HARKNESS, M.D., Davenport, 11:30-12:00

Thursday, May 9

8:30 a. m.

Gothic Room

The Treatment of Cranio-cerebral Injuries, and  
Surgical Clinic—

LOYAL DAVIS, M.D., Chicago 8:30-9:30  
Professor of Medicine, Northwestern University  
Medical School, Chicago

Postoperative Pulmonary Complications: Their Pre-  
vention and Management, and Medical Clinic—

WILLIAM S. MIDDLETON, M.D., Madison, 9:30-10:30  
Professor of Medicine, University of Wisconsin  
Medical School, Madison

Chronic Arthritis: Practical Points in Medical and  
Surgical Treatment—

W. EUGENE WOLCOTT, M.D., Des Moines, 10:30-10:50  
Discussion JAMES W. GRAHAM, M.D., Sioux City, 10:50-10:55

Some New Factors in the Diagnosis of Acute  
Appendicitis—

CLARK N. COOPER, M.D., Waterloo, 10:55-11:15  
Discussion LESTER D. POWELL, M.D., Des Moines, 11:15-11:20

Address—

WALTER L. BIERRING, M.D., 11:20-11:40  
President American Medical Association

The Management of Eye Injuries by the General  
Practitioner—

HARRY S. GRADLE, M.D., Chicago, 11:40-12:10  
Guest, Eye, Ear, Nose and Throat Section

# Sectional Conferences

Wednesday Afternoon, May 8

Time	Cardiovascular and Chest Section	Section on Neurology and Psychiatry	Section on Abdominal and Thoracic Surgery	Section on Urology	Eye, Ear, Nose and Throat Section
	H. W. Rathe, M.D., <i>Chairman</i> John C. Parsons, M.D., <i>Acting Chairman</i> Doric Room	W. E. Ash, M.D., <i>Chairman</i> Lounge—1:30-3:00 p. m.	Donald C. Conzett, M.D., <i>Chairman</i> S. C. Plummer, M.D., <i>Co-chairman</i> Egyptian Room	Gerald V. Caughlan, M.D., <i>Chairman</i> Card Room	Gothic Room Instructional Conferences
	The Heart and Athletics— RAYMOND S. GROSSMAN, M.D., Marshalltown	The Sequelae of Head Injuries— ALFRED L. SAHS, M.D., Iowa City	Indications for Surgery in Pulmonary Tuberculosis— JESSE C. PAINTER, M.D., Dubuque	Congenital Absence of One Kidney— F. HAROLD ENTZ, M.D., Waterloo	
	Discussion— JESSE S. COONTZ, M.D., Leon	Diagnosis of the Common Causes of Paralysis— FRANK J. ROHNER, M.D., Iowa City	Discussion— ROSCOE P. CARNEY, M.D., Davenport	Discussion— RUBIN FLOCKS, M.D., Iowa City	
	The Heart in Bronchial Asthma— WILLIAM D. PAUL, M.D., Iowa City	Discussion— WILLIAM C. EGLOFF, M.D., Mason City	Preoperative and Postoperative Care of the Thyroid Patient— FRANK B. DORSEY, Jr., M.D., Keokuk	Brief Review of Urologic Drug Therapy— GEORGE H. STEINLE, M.D., Burlington	
	Discussion— JOHN C. PARSONS, M.D., Creston	Treatment of Asymptomatic Neurosyphilis— ROBERT N. LARIMER, M.D., Sioux City	Discussion— JOHN B. SYNHORST, M.D., Des Moines	Discussion— ORAN W. KING, M.D., Des Moines	Ophthalmology 1:30-2:30
1:30	Heart Disease in Pregnancy— ROY I. THEISEN, M.D., Dubuque	Discussion— MARK C. WHEELLOCK, M.D., Cherokee	Surgical Diseases of the Pancreas— FRANK R. PETERSON, M.D., Iowa City	Experience Gained in Urinary Tract Infection— WILLIAM R. HORNADAY, M.D., Des Moines	P. J. LEINFELDER, M.D., Department of Ophthalmology, University of Iowa
	Discussion— RAYMOND RICE, M.D., Council Bluffs	The Psychiatrist and Internal Medicine— CHARLES F. OBERMANN, M.D., Clarinda	Discussion— CHARLES S. KRAUSE, M.D., Cedar Rapids	Discussion— ANTHONY C. FROHL, M.D., Dubuque	
	The Heart and Deficiency Diseases— ELMER E. KORTKE, M.D., Des Moines	Discussion— JOHN I. MARKER, M.D., Davenport	Abdominal Drainage: Its Use and Abuse— EDWARD J. HARNAGEL, M.D., Des Moines	Colloid Carcinoma of the Bladder— HARRY P. LEE, M.D., Iowa City	
	Discussion— HAROLD F. NOBLE, M.D., Fort Madison	Section on Evaluation of Laboratory Procedures Clarence W. Baldridge, M.D., Deceased, <i>Chairman</i> Frederick H. Lamb, M.D., Acting <i>Chairman</i> Lounge—3:00-4:30 p. m.	Discussion— LESTER C. KEHN, M.D., Waverly	Discussion— JOSEPH B. PRIESTLEY, M.D., Des Moines	Otolaryngology 2:30-3:30
to	The Heart in Relation to Surgery and Anesthetics— HERBERT W. RATHE, M.D., Waverly	Colored Lantern Slides of Blood Cells— HYMAN M. HUREVITZ, M.D., Iowa City	Treatment of Strangulated External Hernia— WILLIAM E. COXY, M.D., Sioux City	Complications of Specific Urethritis— GEORGE D. JENKINS, M.D., Burlington	DEAN M. LIEBLE, M.D., and others from the Department of Otolaryngology, University of Iowa
	Discussion— BENJAMIN F. WOLVERTON, M.D., Cedar Rapids	Technic and Reasons for Neutrophilic Lobe Counts— FREDERICK H. LAMB, M.D., Davenport	Discussion— CHESTER H. JOHNSON, M.D., Cherokee	Discussion— JAMES P. SHARON, M.D., Fort Dodge	
	Symposium: NON-TUBERCULOUS PULMONARY DISEASES Pathology including Etiology— ALLEN C. STARRY, M.D., Sioux City	Laboratory Diagnosis of Amebic Dysentery— IRVING H. BORTS, M.D., Iowa City	Presentation of a Rare Abdominal Case Report— WILLIAM A. BOCKOVEN, M.D., Cresco	Nephropexy, Indications for, Operative Procedure and Results— CLIFFORD W. LASH, M.D., Des Moines	
	Discussion— DANIEL J. GLOMSET, M.D., Des Moines	Discussion— ALDIS A. JOHNSON, M.D., Council Bluffs	Discussion— FELIX A. HENNESSY, M.D., Calmar	Discussion— JAMES P. SHARON, M.D., Fort Dodge	
	Physical Diagnosis— WILLIAM C. SPEAR, M.D., Oakdale	The Concentration Test as a Practical Means of Determining Kidney Insufficiency— JOHN L. KESTEL, M.D., Iowa City	Tumors of the Breast— BENJAMIN J. DIERKER, M.D., Fort Madison	Discussion— JAMES P. SHARON, M.D., Fort Dodge	
	Discussion— JOHN H. PECK, M.D., Des Moines	Discussion— M. G. MEYER, M.D., Marshalltown	Surgical Treatment of Gall-bladder Disease— LEE SHAFER, M.D., Davenport	Hematuria— LAWRENCE E. PIERSON, M.D., Sioux City	
4:30	X-Ray Findings— HARRY M. DAHL, M.D., Des Moines	Discussion— JOHN L. KESTEL, M.D., Iowa City	Discussion— WILLIAM A. ROHLF, M.D., Waverly	Discussion— WALTER V. CAMPBELL, M.D., Oskaloosa	Clinic 3:30-5:00
	Discussion— LESTER G. ERICKSEN, M.D., Dubuque	Pneumococcus Grouping Tests— JULIUS WEINGART, M.D., Des Moines	The Significance of Jaundice in Biliary Tract Disease— HOWARD L. BEYE, M.D., Iowa City	Staphylococci Kidney— GERALD V. CAUGHLAN, M.D., Council Bluffs	Glaucoma Case Presentations— HARRY S. GRADLE, M.D., Chicago
	Therapy— G. RAYMOND JOHNSON, M.D., Ottumwa	Discussion— LAURENCE E. COOLEY, M.D., Dubuque	Discussion— ERNEST M. KEASTEN, M.D., Fort Dodge	Discussion— MERRILL M. BENEFER, M.D., Davenport	
	Discussion— JOHN RUSSELL, M.D., Des Moines				



Time	Gastro-Intestinal Section	Section on Pediatrics	Section on Gynecology and Obstetrics	Section on Industrial and Orthopedic Surgery	Section on Medical Economics
	Benjamin F. Wolverton, M.D., Chairman Doric Room	Dennis H. Kelly, M.D., Chairman Lounge	Lawrence E. Kelley, M.D., Chairman Egyptian Room	Peter C. Bendixen, M.D., Deceased, Chairman William G. Bessmer, M.D., Acting Chairman Card Room	Thomas F. Thornton, M.D., Chairman West Committee Room
	The Differential Diagnosis of Obstructive Jaundice— George B. Crow, M.D., Burlington Discussion— GORDEN N. BEST, M.D., Council Bluffs	Indications for Removal of Tonsils and Adenoids— LEROY M. DOWNING, M.D., Cedar Rapids Discussion— MORGAN J. FOSTER, M.D., Cedar Rapids	The Pre-natal Management of Pregnancy with Special Reference to the Toxemias— DRAPER LONG, M.D., Mason City Discussion— EMORY E. MAGEE, M.D., Waterloo	Symposium on EMERGENCY SURGERY: FARM ACCIDENTS— RANSOM D. BERNARD, M.D., Clarion Discussion— KENNETH L. JOHNSTON, M.D., Oskaloosa	The Patient-Physician Relationship Should be Maintained— HOWARD J. HARTMAN, M.D., Waterloo
	Functional Disturbances of the Gastro-intestinal Tract— WILLIAM H. RENULEMAN, M.D., Davenport Discussion— LEE R. WOODWARD, M.D., Mason City	The Management of Otitis Media— ROLAND STAUD, M.D., Fort Dodge Discussion— JOHN M. HAYEK, M.D., Cedar Rapids	Nephritis and Pregnancy— WILLIAM F. MENCERT, M.D., Iowa City Discussion— MERLE J. McGRANE, M.D., New Hampton	Automobile Accidents— EDWARD H. FILES, M.D., Cedar Rapids Discussion— F. L. KNOWLES, M.D., Fort Dodge	Health Insurance Is Not the Remedy— JAMES C. HILL, M.D., Newton
1:30	Medical Treatment of Gallbladder Disease— ALDIS A. JOHNSON, M.D., Council Bluffs Discussion— ANDISON C. PAGE, M.D., Des Moines	The Management of Diarrheas— ROBERT H. McBURNE, M.D., Sioux City Discussion— PEIRCE D. KNOTT, M.D., Sioux City	Modern Post-partum Care and Treatment— T. FRANK HESCH, M.D., Cedar Rapids Discussion— EVERETT D. PLASS, M.D., Iowa City	Industrial Accidents— HAROLD A. SPILMAN, M.D., Ottumwa Discussion— J. A. WILLIAM JOHNSON, M.D., Newton	Precautions Against Malpractice— WILLIS O'BRIEN, Attorney, Des Moines
	Diagnosis and Treatment of Diarrheas— CHARLES C. COLLESTER, M.D., Spencer Discussion— THOMAS R. CAMPBELL, M.D., Sioux Rapids	Gastro-intestinal Allergy and Migraine in Childhood— MARTIN D. OTT, M.D., Davenport Discussion— MARK L. FLOYD, M.D., Iowa City	Diagnosis and Treatment of Tumors of the Ovary— WALTER F. HARRIMAN, M.D., Sioux City Discussion— HOWARD I. DOWN, M.D., Sioux City	Back Injuries— ARCH F. O'DONOGHUE, M.D., Sioux City Discussion— DOUGLAS N. GIBSON, M.D., Des Moines	The Doctor in Court— FRANK A. ELY, M.D., Des Moines
	Cardiospasm— JOHN T. STRAWN, M.D., Des Moines Discussion— REU L. BARNETT, M.D., Atlantic	The Present Status of Serum Therapy in Whooping Cough, Measles, Scarlet Fever and Diphtheria— LEE F. HILL, M.D., Des Moines Discussion— JAMES F. GERKEN, M.D., Waterloo	Anesthesia and Analgesia in Labor— E. PARTISH LOVEJOY, M.D., Des Moines General Discussion	Fracture Dislocation of the Spine with Spinal Cord Injury— LOYAL DAVIS, M.D., Chicago General Discussion	Adequate Records and General Office Management— EDWARD HAGEN, M.D., Decorah
	The Management of Functional Constipation— ALBERT A. SCHULTZ, M.D., Fort Dodge Discussion— HOWARD R. HESS, M.D., Cedar Rapids	The Principles of the Management of Prematurity— JULIAN D. BOYD, M.D., Iowa City Discussion— JOSEPH B. THORNELL, M.D., Council Bluffs	Uterine Fibromata — Pathology and Treatment— JOSEPH B. PRIESTLEY, M.D., Des Moines Discussion— RAY R. HARRIS, M.D., Dubuque	Tuberculous Tenosynovitis of the Wrist and Fingers— ARTHUR STEINDLER, M.D., Iowa City General Discussion	Contract Practice— JAMES C. DONAHUE, M.D., Centerville
	Diverticulosis of the Colon— ARTHUR W. ESKINE, M.D., Cedar Rapids Discussion— WILLIAM S. GREENLEAF, M.D., Atlantic	Preparalytic Poliomyelitis— FRED MOORE, M.D., Des Moines Discussion— BEN C. HAMILTON, JR., M.D., Jefferson	The Rhythm Theory of Birth Control— JOSEPH BROWN, M.D., Des Moines General Discussion	Injuries to the Hand— VERL A. RUTH, M.D., Des Moines Discussion— JOHN T. HANNA, M.D., Burlington	The Epstein Bill— ROBERT L. PARKER, M.D., Des Moines
	Gastrojejuneral Ulcers— WILLIAM H. GIBBON, M.D., Sioux City Discussion— HOWARD L. BEYE, M.D., Iowa City	The Management of Respiratory Infections— JACK V. TREYNOR, M.D., Council Bluffs Discussion— DENNIS H. KELLY, M.D., Des Moines	Trichomonas Vaginalis: Diagnosis, Case of and Treatment— JULIAN M. BRUNER, M.D., Des Moines General Discussion	Relationship Between the Industrial Surgeon, Insurance Company, and the Employee— WILLIAM C. GOENNE, M.D., Davenport Discussion— FRANK M. KEEFE, M.D., Clinton	Our Profession and the Economics of Medical Care of Marginal Cases— JOHN I. MARKER, M.D., Davenport

to

4:30

Wednesday Evening, May 8

8:00 p. m.

Blackhawk Hotel

# ENTERTAINMENT AND SMOKER

8:00 p. m.

Theatre Party or Bridge for Members of Woman's  
Auxiliary and other ladies

Assemble at Blackhawk Hotel

Thursday Evening, May 9

# ANNUAL BANQUET

Masonic Temple—Banquet Hall

6:30 p. m.

Toastmaster—

F. B. DORSEY, JR., M.D., Keokuk

President's Address—

GORDON F. HARKNESS, M.D., Davenport

Address by the President-elect—

THOMAS A. BURCHAM, M.D., Des Moines

Music—Dancing—Entertainment

Friday, May 10

8:30 a. m.

Gothic Room

Lymph Node Diseases: Their Differential Diagnosis  
and Treatment, and Medical Clinic—

WILLIAM S. MIDDLETON, M.D., Madison, 8:30-9:30

The Diagnosis and Treatment of Peripheral Nerve  
Injuries, and Surgical Clinic—

LOYAL DAVIS, M.D., Chicago, 9:30-10:30

Treatment of Acute Nephritis in Children—

C. ANDERSON ALDRICH, M.D., Winnetka, 10:30-11:00

Rocky Mountain Spotted Fever—

CARL F. JORDAN, M.D., Des Moines, 11:00-11:20  
Discussion led by HERBERT E. STROY, M.D., Osceola, 11:20-11:30

Address—Deficiency Disease as a Clinical Problem—

JAMES S. MCLESTER, M.D., Birmingham, 11:30-11:45  
President-elect, American Medical Association

Report of House of Delegates

11:45-12:00

Installation of President

# OPHTHALMOLOGY, OTOTOLOGY AND RHINOLARYNGOLOGY

Wednesday, May 8

1:30 p. m.

Gothic Room

# OPHTHALMOLOGY

1:30-2:30

P. J. LEINFELDER, M.D.,

Department of Ophthalmology, University of Iowa

# OTOLARYNGOLOGY

2:30-3:30

DEAN M. LIERLE, M.D.,

Department of Otolaryngology, University of Iowa

General Meeting

# CLINIC

3:30-5:00

Glaucoma Case Presentations—

HARRY S. GRADLE, M.D., Chicago

Thursday, May 8

8:30 a. m.

Blackhawk Hotel

Breakfast

9:30 a. m.

Doric Room—Masonic Temple

Chairman's Address: The Business Side of the  
Practice of Ophthalmology and Otolaryn-  
gology—

SUMNER B. CHASE, M.D., Fort Dodge

Management of Hemorrhage in Ophthalmology  
and Otolaryngology—

WAYNE FOSTER, M.D., Cedar Rapids

Discussion—EDWIN C. COBB, M.D., Marshalltown

LYDD G. HOWARD, M.D., Council Bluffs

The Present Status of the Management of Petro-  
sitis—

F. HAROLD REULING, M.D., Waterloo

Discussion—HARRY H. LAMB, M.D., Davenport

FREDERICK W. BAILEY, Cedar Rapids

The Management of Eye Injuries by the General  
Practitioner—Delivered before the General  
Session—

HARRY S. GRADLE, M.D., Chicago,  
Guest, Eye, Ear, Nose and Throat Section

2:00 p. m.

Present Status of the Management of Myopia—

JOSEPH E. DVORAK, M.D., Sioux City

Discussion—FRED BOILER, M.D., Iowa City

ELMER WEIH, M.D., Clinton

Evaluation of Recent So-called Advances in  
Ophthalmology—

HARRY S. CRADLE, M. D., Chicago

The Present Status of the Management of Men-  
ingitis Secondary to Otitic or Sinus Infec-  
tions—

JAMES A. DOWNING, M.D., Des Moines

Discussion—DEAN M. LIERLE, M.D., Iowa City

WILLIAM W. PEARSON, M.D., Des Moines

New Therapeutic Agents and Their Practical  
Value in:

Ophthalmology—

ABBOTT M. DEAN, M.D., Council Bluffs

Otolaryngology—

JOHN THORSON, M.D., Dubuque

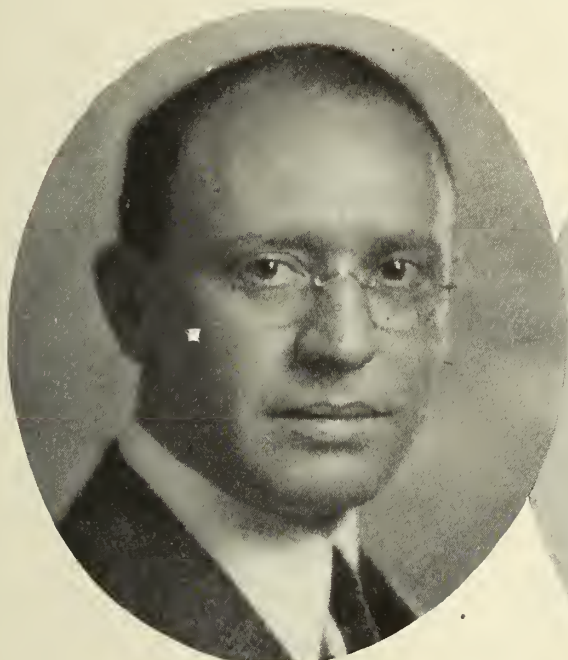
Discussion—STEPHEN A. O'BRIEN, M.D., Mason City

CECIL JONES, M.D., Des Moines



## GUEST SPEAKERS

### Eighty-fourth Annual Session



C. ANDERSON ALDRICH, M.D.,  
Winnetka, Illinois



WILLIAM S. MIDDLETON, M.D.,  
Madison, Wisconsin



LOYAL DAVIS, M.D.,  
Chicago, Illinois



HARRY S. GRADLE, M.D.,  
Chicago, Illinois

## HOUSE OF DELEGATES

Game Room

Wednesday, May 8

4:00 p. m.

Roll Call

Approval of Minutes of Friday Morning Session, 1934

Report of Secretary

Report of Treasurer

Report of Council

Reports of Council Committees

Speakers Bureau Committee—  
 DANIEL J. GLOMSET, Des Moines, Chairman  
 Committee on Professional Relations—  
 E. J. WATSON, Diagonal, Chairman  
 Committee on Public Relations—  
 EVON WALKER, Ottumwa, Chairman  
 Cancer Committee—  
 WILLIAM JEPSON, Sioux City, Chairman

Report of Board of Trustees

Report of the Delegates to the American Medical Association

Reports of Standing Committees of the House of Delegates:

Committee on Constitution and By-Laws—  
 WALTER R. BROCK, Sheldon, Chairman  
 Committee on Finance—  
 ERNEST C. McCURE, Bussey, Chairman  
 Medico-Legal Committee—  
 FRANK A. ELY, Des Moines, Chairman  
 Committee on Necrology—  
 ARTHUR W. ERSKINE, Cedar Rapids, Secretary  
 Committee on Publication—  
 RALPH R. SIMMONS, Des Moines, Editor  
 Committee on Public Policy and Legislation—  
 FRED MOORE, Des Moines, Chairman

Reports of Special Committees of the House of Delegates:

Committee on Child Health and Protection—  
 R. H. McBRIDE, Sioux City, Chairman  
 Historical Committee—  
 WALTER L. BIERING, Des Moines, Chairman  
 Committee on Medical Economics—  
 THOMAS F. THORNTON, Waterloo, Chairman  
 Committee on Medical Education and Hospitals—  
 ARTHUR W. ERSKINE, Cedar Rapids, Chairman  
 Medical Library Committee—  
 JEANNETTE DEAN-THROCKMORTON, Des Moines, Librarian  
 Committee on Military Affairs—  
 ARNOLD L. JENSEN, Council Bluffs, Secretary  
 Woman's Auxiliary Advisory Committee—  
 ALDIS A. JOHNSON, Council Bluffs, Chairman

Memorials and Communications

New Business

Election of Committee on Nominations

Friday, May 11

8:00 a. m.

Roll Call

Reading of Minutes

Report of Committee on Nominations

Election of Officers

Reports of Committees

Unfinished Business

New Business

Adjournment

## ENTERTAINMENT

Tuesday, May 7

Afternoon

Rock Island Arsenal Golf Club  
 Pre-convention Golf Tournament

Wednesday, May 8

8:00 p. m.

Stag and Smoker  
 Blackhawk Hotel

8:00 p. m.

Theatre Party or Bridge  
 For the Ladies, Blackhawk Hotel

Thursday, May 9

12:30 p. m.

Auxiliary Luncheon, Rock Island Arsenal Club

All visiting ladies invited

6:30 p. m.

Annual Banquet, Temple Banquet Hall  
 Physicians, their wives and guests

## Arrangements Committee

GORDON F. HARKNESS.....Davenport  
 ROBERT L. PARKER.....Des Moines  
 HAROLD J. MCCOY.....Des Moines  
 RAYMOND E. PECK.....Davenport  
 MARTIN D. OTT.....Davenport

## Local Committees

RAYMOND E. PECK, General Chairman

MERRILL M. BENFER, Secretary

Arrangements.....WILLIAM H. RENDLEMAN, General Chairman  
 Clinics.....JOHN E. ROCK  
 Room Supervision.....JOHN I. MARKER  
 Commercial Exhibits.....EDWARD F. STROBEHN  
 Scientific Exhibits.....FREDERICK H. LAMB

Entertainment.....HOWARD A. WEIS, General Chairman  
 Smoker .....WILLIAM A. STOECKS  
 Golf .....JEFFERSON D. BLYTHING  
 Banquet.....HARRY H. LAMB  
 Autos.....ROSCOE P. CARNEY  
 Ladies Auxiliary.....MRS. PAUL A. WHITE

Information.....HENRY A. MEYERS  
 Reception.....PETER H. SCHROEDER



## IOWA STATE MEDICAL SOCIETY OFFICERS AND COMMITTEES 1934-1935

President.....	Gordon F. Harkness, Davenport
President-Elect.....	Thomas A. Burcham, Des Moines
First Vice President.....	F. B. Dorsey, Jr., Keokuk
Second Vice President.....	James C. Hill, Newton
Secretary.....	Robert L. Parker, Des Moines
Treasurer.....	Harold J. McCoy, Des Moines

## COUNCILORS

	Term Expires
First District—Felix A. Hennessy, Calmar.....	1937
Second District—Lee R. Woodward, Mason City.....	1938
Third District—Frank P. Winkler, Sibley.....	1939
Fourth District—James E. Reeder, Sioux City.....	1935
Fifth District—William W. Pearson, Des Moines.....	1936
Sixth District—Charles W. Ellyson, Waterloo.....	1937
Seventh District—Arthur W. Erskine, Cedar Rapids.....	1938
Eighth District—Clyde A. Boice, Washington.....	1939
Ninth District—Harold A. Spilman, Ottumwa (Chairman).....	1935
Tenth District—James G. Macrae, Creston.....	1936
Eleventh District—M. Charles Hennessy, Council Bluffs.....	1937

## TRUSTEES

Oliver J. Fay, Des Moines.....	1937
John I. Marker, Davenport.....	1936
Edward M. Myers, Boone.....	1935

## DELEGATES TO A. M. A.

Fred Moore, Des Moines.....	1935
T. F. Thornton, Waterloo.....	1936
V. L. Treynor, Council Bluffs.....	1936

## ALTERNATE DELEGATES TO A. M. A.

N. G. Alcock, Iowa City.....	1935
R. H. Lott, Carroll.....	1936
F. P. McNamara, Dubuque.....	1936

## EDITOR OF THE JOURNAL

Ralph R. Simmons.....	Des Moines
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## STANDING COMMITTEES OF THE HOUSE OF DELEGATES

## ARRANGEMENTS

Gordon F. Harkness, Chairman.....	Davenport
Robert L. Parker.....	Des Moines
Harold J. McCoy.....	Des Moines

## CONSTITUTION AND BY-LAWS

W. R. Brock, Chairman.....	Sheldon
John H. Henkin.....	Sioux City
W. A. Sternberg.....	Mount Pleasant

## FINANCE

Ernest C. McClure, Chairman.....	Bussey
Leslie L. Carr.....	Clermont
A. S. Bowers.....	Orient

## MEDICO-LEGAL

Frank A. Ely, Des Moines, Chairman.....	1935
George C. Albright, Iowa City.....	1936
F. Earl Bellinger, Council Bluffs.....	1937

## PUBLICATION COMMITTEE

Ralph R. Simmons, Editor.....	Des Moines
Robert L. Parker, Secretary.....	Des Moines
Oliver J. Fay, Trustee.....	Des Moines
John I. Marker, Trustee.....	Davenport
Edward M. Myers, Trustee.....	Boone

## PUBLIC POLICY AND LEGISLATION

Fred Moore, Chairman.....	Des Moines
R. D. Bernard.....	Clarion
*Peter A. Bendixen.....	Davenport
Gordon F. Harkness.....	Davenport
Robert L. Parker.....	Des Moines

## SCIENTIFIC WORK

Gordon F. Harkness.....	Davenport
Thomas A. Burcham.....	Des Moines
Robert L. Parker.....	Des Moines
Harold J. McCoy.....	Des Moines

## SPECIAL COMMITTEES OF THE HOUSE OF DELEGATES

## COMMITTEE ON CHILD HEALTH AND PROTECTION

R. H. McBride, Chairman.....	Sioux City
E. D. Plass.....	Iowa City
H. E. Farnsworth.....	Storm Lake
Lee F. Hill.....	Des Moines
James F. Gerken.....	Waterloo

## HISTORICAL

Walter L. Bierring, Chairman.....	Des Moines
Frank M. Fuller.....	Keokuk
T. B. Throckmorton.....	Des Moines
John T. McClintock.....	Iowa City
*Henry B. Young.....	Burlington
William Jepson.....	Sioux City

## MEDICAL ECONOMICS

T. F. Thornton, Chairman.....	Waterloo
James C. Hill.....	Newton
James C. Donahue.....	Centerville

## MEDICAL EDUCATION AND HOSPITALS

Arthur W. Erskine, Chairman.....	Cedar Rapids
T. J. Irish.....	Forest City
B. J. Dierker.....	Fort Madison

## MEDICAL LIBRARY

Con R. Harken, Chairman.....	Osceola
H. A. Tolliver.....	Charles City
Jeannette Dean-Throckmorton.....	Des Moines

## MILITARY AFFAIRS

T. F. Suchomel, Chairman.....	Cedar Rapids
Harold A. Spilman.....	Ottumwa
Arnold L. Jensen.....	Council Bluffs

## WOMAN'S AUXILIARY ADVISORY COMMITTEE

Aldis A. Johnson, Chairman.....	Council Bluffs
W. E. Baker.....	Des Moines
Charles F. Snopek.....	Cresco
W. T. Peters.....	Burt
T. J. Wigim.....	Muscatine

## STANDING COMMITTEE OF THE COUNCIL

## SPEAKERS BUREAU COMMITTEE

Daniel J. Glomset, Chairman.....	Des Moines
Felix A. Hennessy.....	Calmar
L. C. Kern.....	Waverly
Harold L. Brereton.....	Emmetsburg
Sydney D. Maiden.....	Council Bluffs

## COMMITTEE ON PROFESSIONAL RELATIONS

E. J. Watson, Chairman.....	Diagonal
R. A. Becker.....	Atlantic
John T. Hanna.....	Burlington

## COMMITTEE ON PUBLIC RELATIONS

Evon Walker, Chairman.....	Ottumwa
Peirce D. Knott.....	Sioux City
Pearl E. Somers.....	Grinnell

\* Deceased.

## HEADQUARTERS



MASONIC TEMPLE

### MEETING PLACES

Headquarters—Masonic Temple  
 Headquarters Hotel—Blackhawk Hotel  
 General Meetings—Gothic Room, Masonic Temple  
 Sectional Meetings—Doric Room, Lounge, Egyptian Room, Card Room, Gothic Room, West Committee Room; Masonic Temple  
 House of Delegates—Game Room, Masonic Temple  
 Eye, Ear, Nose and Throat Section—Gothic Room, Wednesday; Doric Room and Gothic Room, Thursday; Masonic Temple  
 Registration and Commercial Exhibits—Main Lobby, Masonic Temple  
 Scientific Exhibits—Second Floor Lobby, Masonic Temple  
 Headquarters for Woman's Auxiliary — Blackhawk Hotel  
 Headquarters for State Society of Iowa Medical Women—Blackhawk Hotel

### SPECIAL MEETINGS

County Secretaries Conference Luncheon  
 Wednesday, May 8  
 Masonic Temple Banquet Hall, 12:15 p. m.

Military Surgeon's Dinner  
 Wednesday, May 8  
 Blackhawk Hotel, 6:30 p. m.

Eye, Ear, Nose and Throat Section  
 Thursday, May 9  
 Blackhawk Hotel, 8:30 a. m.

Iowa Pediatric Club  
 Thursday, May 9  
 Masonic Temple Banquet Hall, 12:15 p. m.

### Section Chairmen and Reporters

Section on Medicine—  
 Chairman, JOHN C. PARSONS, M.D., Creston  
 Section on Surgery—  
 Chairman, DONALD C. CONZETT, M.D., Dubuque  
 Section on Ophthalmology, Otology and Rhinolaryngology—  
 Chairman, SUMNER B. CHASE, M.D., Fort Dodge  
 Reporter, General Sessions, Eye, Ear, Nose and Throat Section and House of Delegates—  
 MASTER REPORTING COMPANY, Chicago

### Rules for Papers and Discussions

For the general session meetings, no address or paper, except those of the President and the Guests, shall occupy more than twenty minutes in its delivery; and no member shall speak longer than five minutes nor more than once on any subject in discussing a paper. All papers read before the Society shall be the property of the Society. Each paper should be deposited with the Secretary when read; if this is not done, it will not be published.

In most of the sectional meetings, the talks are fifteen minutes in length. Discussions may not be longer than five minutes. A typewritten copy of each talk should be left with the chairman of the section so that it can be published in the Journal.

### Registration

Do not fail to register.

Please bring your membership card for presentation at the registration desk.

Women attending the meeting are urged to register at the registration desk for the Woman's Auxiliary at the Blackhawk Hotel. Reservations for the theatre or bridge parties on Wednesday evening will be taken at this registration desk.



# Woman's Auxiliary Iowa State Medical Society

Organized May 9, 1929, Des Moines, Iowa

Sixth Annual Meeting  
Registration Headquarters  
Blackhawk Hotel

## PROGRAM

Wednesday, May 8

10:00 a. m.

Blackhawk Hotel

### Preconvention Meeting

For Board Members and County Auxiliary Presidents

12:00 p. m.

### Luncheon

For Board Members and County Auxiliary Presidents

2:15 p. m.

Gold Room, Blackhawk Hotel

### General Meeting

President Mrs. James A. Downing, presiding

Call to Order by the President—

Address of Welcome—

MRS. GORDON F. HARKNESS, Davenport

Response—

MRS. TOM B. THROCKMORTON, Des Moines

In Memoriam

Music

"The Eternal Feminine"—

E. M. MYERS, M.D., Boone

Reports of Auxiliary State Officers

Reports of Standing Committees

Adjournment

Motor trips and tea at the Outing Club

8:00 p. m.

Theatre or Bridge

Blackhawk Hotel

Complimentary reservations will be made at the registration desk of the Woman's Auxiliary.

Thursday, May 9

9:30 a. m.

Gold Room, Blackhawk Hotel

### General Meeting

Reading of Minutes

Greetings—

GORDON F. HARKNESS, M.D., Davenport  
President, Iowa State Medical Society

Music

Greetings—

THOMAS A. BURCHAM, M.D., Des Moines  
President-elect, Iowa State Medical Society

Reports of County Presidents

Adjournment

12:30 p. m.

Luncheon, Rock Island Arsenal Club

Music

Address—

MRS. S. C. RED, Houston, Texas, Advisory Committee,  
Woman's Auxiliary to the American Medical Association

Greetings from the National Auxiliary—

MRS. ROBERT W. TOMLINSON, Wilmington, Delaware, President.  
Woman's Auxiliary to the American Medical Association

Miscellaneous Entertainment—Optional.

6:30 p. m.

Banquet, Masonic Temple Banquet Hall

Physicians, wives and guests

Friday, May 10

10:00 a. m.

Blackhawk Hotel

### General Meeting

Reading of Minutes

Report of Resolutions Committee

Election of Officers

Installation of Officers

Adjournment

This program, social and business, is for all visiting women. All eligible women are urged to become members.

## State Society of Iowa Medical Women

Thirty-seventh Annual Meeting, Davenport

Wednesday, May 8, 1935

Blackhawk Hotel

Call to Order—

EDNA K. SEXSMITH, M.D., Greenfield, President

Dinner—6:30 p. m.

Program—8:00 p. m.

Premature Separation of Placenta, with Case  
Report—

GAIL A. MCCLURE, M.D., Bussey

Sense Defects of Children—

MARTHA M. LINK, M.D., Dubuque

The State Society of Iowa Medical Women—

EPPIE MCCREA, M.D., Eddyville

Presidential Address—

EDNA K. SEXSMITH, M.D., Greenfield

## OFFICERS

President.....Edna K. Sexsmith, M.D., Greenfield

Secretary—

Cora Williams-Choate, M.D., Marshalltown

Treasurer—

Jeannette Dean-Throckmorton, M.D., Des Moines

## Davenport--The 1935 Convention City

Davenport has been making preparations for some time for the entertainment of the Eighty-fourth Annual Session of the Iowa State Medical Society and a very hearty welcome awaits the delegates and visitors who will attend the session on May 8, 9, and 10. The city has recently celebrated its one hundredth birthday and since it is one of the early midwest white settlements, a brief review of its history may prove of interest to its prospective visitors.

The first claim on the present site of the city of Davenport was sold to Antoine LeClaire in 1833. Three years later it was incorporated and given the name of Davenport, honoring Colonel George Davenport, who at the time was an Indian trader at Fort Armstrong, on Rock Island, where now is located the United States Government Arsenal. The early history of Davenport and vicinity abounds with Indian wars. The Sauks and Foxes, under the leadership of the belligerent chief, Black Hawk, had many engagements with other tribes and with the white settlers and militia. Major Zachary Taylor, later president of the United States, fought the British and the Indians at Credit Island just below the city, in the only international battle fought in Iowa. An event that may have hastened the Civil War took place in Davenport when Dr. John Emerson, post surgeon at Fort Armstrong, brought his slave, Dred Scott, into Iowa. The event was the basis of the now famous suit for freedom. After leaving the post, Dr. Emerson practiced his profession in Davenport.

The first church, St. Anthony's Catholic Church, was built in 1838 at what is now Fourth and Main Streets and this old brick building, with additions, is still occupied by the congregation of St. Anthony's parish. Davenport is the Diocesan City of the Roman Catholic Church and of the Episcopal Church in Iowa. Iowa College was located in Davenport in 1847 but in the late fifties was moved to Grinnell and is now known as Grinnell College. The first bridge over the Mississippi River between the headwaters and the Gulf was completed in 1856, joining Rock Island with Davenport and this bridge was succeeded by the present government bridge, built by the government and the Rock Island Railway Company. The young attorney, Abraham Lincoln, visited Davenport during a period of litigation between the river people and those interested in the bridge. The recent completion of the new U. S. Government Dam No. 15, a part of the nine foot channel project, now assures Davenport and vicinity of Mississippi River transportation to the Gulf and sea.

There are many spots of interest to visit in Davenport, the most outstanding of which are probably the Public Museum and the Municipal Art Gallery.

The Davenport Public Museum is located directly across the street from the Masonic Temple, where the convention is to be held. This institution was founded in 1867, one year earlier than the New York

museums, and contains collections such as would not ordinarily be found in cities of less than one-half a million or more population. A visit to the museum is sometimes called "a trip around the world in half a day," for here are found collections not only from this country but from Greenland, Alaska, Mexico, Panama, Peru, the South Sea Islands, Japan, China, India, Egypt, Africa and Europe. From another point of view a visit to the museum could be called "the story of man's achievements." In its collections are stone age implements, dating back to the Chellean period, and others showing the developments through the many periods in the history of man. While the story is not complete in the museum, it includes material from the time of pioneer life in America to the days of electricity and aviation. From still another point of view a visit to the museum could be called "a trip back to the beginnings of life," for in its geological collections are found the records of rocks back through the early periods when trilobites and other invertebrates were king of beasts. The museum contains a scientific library with about 70,000 accessions, including files of many foreign publications. There is also a large, interesting and valuable collection of old scientific books, a number dating back to the fifteenth and sixteenth centuries. From the medical point of view it is interesting to note that in the early days of the museum medical men took an important part in its work. This is natural because fifty or seventy-five years ago medical men were the ones who had received the most thorough scientific training. Among the presidents of the museum eight have been physicians. Dr. G. E. Decker, the present president, has held the office for twenty years. The museum is open to visitors without charge and special arrangements for trips through it will be made for those attending the convention.

One of the unique and interesting features of Davenport is its Municipal Art Gallery. Many years ago, just before the Civil War, a large number of refugees, revolutionists of the Wars of 1848, came to Davenport from Germany. They brought what was rare in those early pioneer days, a love of music, art and drama into the rough settlements, and their influence made Davenport an oasis of culture in the wild western country. Naturally the love of art was another phase of this same cultural urge and one of the immigrant group collected over four hundred paintings from all parts of the world. When his collection was completed it was valued at nearly half a million dollars and Mr. C. A. Ficke presented it to the city of Davenport. This was the first municipally owned art gallery in the United States. Since that time several hundred more pictures have been added to the Gallery. The Carnegie Foundation gave a splendid art library and collection of reproductions and photographs. There are about ten thousand etchings, drawings, and lantern slides available for study, so that practically every great mas-



terpiece in painting, architecture, sculpture and "black and white" can be shown at the Gallery in excellent reproduction. The annual number of visitors to the Gallery averages about twenty thousand. Those attending the annual meeting have been invited to spend some time there. The collection is well worth an hour's time, for it is well known that of all the professions, medicine has more art lovers than any other not strictly devoted to art.

Although Davenport is in the eastern part of the state, it is located, approximately, in the center of the densest medical population in Iowa. Because of the interest manifest in all activities of the State Society, a good representation from all sections of the state is expected at the meeting. Invitations are being extended to doctors in the neighboring counties in Illinois and it is hoped that we will be privileged to have many guests from there. The program committee has been at work since early last summer and the finished program bears excellent testimony to the careful planning and work which has gone into it. The sectional conferences initiated last year, and so enthusiastically received, have been continued and amplified. An innovation this year in these conferences is a section on laboratory procedures and one on applied medical economics. The guest speakers are outstanding men in their field and will make valuable contributions to the program. The Iowa State Medical Society is to be singularly honored this year by having on the program both the President of the American Medical Association, Dr. Walter L. Biering, and the President-elect, Dr. James S. McLester.

Headquarters for the meeting, the new Masonic Temple, constitutes an ideal setting for the meetings. It is spacious enough to house all of the many meetings scheduled, including the House of Delegates; and provides unusually desirable space for the commercial exhibitors on the main floor lobby, and an equally generous room on the second floor for one of the most extensive and interesting scientific exhibits ever arranged for the state meeting. This exhibit has been arranged by a committee headed by the President-elect, Dr. Thomas A. Burcham, and plans are already complete for twenty or more unusual exhibits, demonstrations, etc.

A large staff of doctors serving on local committees in Davenport has cooperated with the President and the State Society office in arranging for every comfort of the visitors at the 1935 meeting. In addition to the scientific sessions, the entertainment feature has been given much attention, with plans for a pre-convention golf tournament, a stag

smoker, theatre and bridge parties for the ladies, and the annual banquet with interesting short speeches, and dancing, music and bridge.

We should especially like to acknowledge our appreciation to the general chairman of local arrangements and to the directors of the Davenport Public Museum and the Municipal Art Gallery for the interesting facts and information regarding these two institutions and the historical facts about Davenport.

Davenport may be reached by the Rock Island, the Burlington and the Milwaukee railroads. A network of paved highways from all sections of the state lead into the convention city. Hotel accommodations are ample. The Blackhawk Hotel will be the headquarters hotel and will serve as the meeting place for the Woman's Auxiliary and the State Society of Iowa

Medical Women. Following is a list of strictly modern hotels, fully equipped for your comfort:

Hotel Blackhawk—400 rooms—

Single, \$2.50 to \$5.50.

Double, \$3.50 to \$5.50.

Twin beds, \$5.50 to \$7.00.

Mississippi Hotel—200 rooms—

Single, \$2.50 to \$5.50.

Double, \$3.50 to \$5.50.

Twin beds, \$5.50 to \$7.00.

Davenport Hotel—150 rooms—

Single, \$1.50 to \$1.75 without bath.

Double, \$2.50 to \$2.75 without bath.

Single, \$2 to \$2.50 with bath.

Double, \$3 to \$4 with bath.

Dempsey Hotel—60 rooms—

Single, \$1.25 without bath.

Double, \$1.50 without bath.

Single, \$1.50 with bath.

Double, \$2.50 with bath.

Reservations should be made direct with the hotels, but delegates and guests to the session may write to the local committee, in an emergency, stating what reservations they desire and the committee will secure them. Address communications for reservations to Dr. P. H. Schroeder, Chairman of Reception, Davenport.

A report of the plans for the pre-convention golf tournament was printed in the February issue of the JOURNAL. This will be held at the Rock Island Arsenal Golf Club, which has extended the society the privilege of using the course on the afternoon of May 7, the day before the general sessions convene. A smoker dinner will be held at the club after the tournament, when prizes will be awarded. Those wishing to participate in this interesting event and who have not already communicated with Dr. Raymond E. Peck of Davenport, are urged to do so at once before the final arrangements are completed.

Unusual cooperation has been extended in every activity of the State Society this year. May the good record continue and be responsible for a banner attendance at the Eighty-fourth Annual Session at Davenport, May 8, 9, and 10.



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ADVANCES IN INTERNAL MEDICINE  
IN 1934J. STUART McQUISTON, M.D.,  
Cedar Rapids

In the short space of this article an attempt will be made to touch on some of the outstanding work in internal medicine during 1934.

Air conditioning in public meeting places has gone forward with great rapidity so that now the layman expects to find this service in up to date buildings. The medical aspects of conditioned air are reviewed by Rowe.<sup>1</sup>

The common cold, because of its economic aspect, continues to hold the interest of investigators. Dochez, Mills, and Kneeland<sup>2</sup> believe a virus is the etiologic agent. Rosenow<sup>3</sup> maintains that a streptococcus is the causative factor. Dochez is attempting to prepare a "cold" virus vaccine, while Rosenow is using a specially prepared streptococcus vaccine with good results in the prevention and treatment of colds and influenza. There are numerous commercial cold vaccines now available. Diehl,<sup>4</sup> of the University of Minnesota, advocates and reports good results in the treatment of colds with a combination of codeine and papaverine. The use of Vitamin A for protection against respiratory infections has not stood the test of time. Shibley and Spies<sup>5</sup> conclude that Vitamin A in the form of halibut liver oil has no effect on the incidence or severity of colds, and their studies indicate only suggestive but not conclusive evidence that Vitamin A shortens colds slightly in the winter months. The question of etiology remains open with most investigators favoring a virus as the cause. The prevention of colds by means of various vaccines seems worthy of continued trial especially in "cold-susceptible" persons. No matter what special agent is under trial, measures to improve the general health should not be neglected.

Of greatest interest recently in the therapy of pneumonia is the use of therapeutic pneumothorax in unilateral cases. Pain, and dyspnea were promptly relieved by this treatment in eleven patients according to Behrend and Cowper.<sup>6</sup> Nine of their patients recovered and the two deaths could not be attributed to the pneumothorax. They conclude that pneumothorax is not a cure-all, but has shown itself to be a valuable adjunct in the treatment of lobar pneumonia and even in some cases a life saving measure. Leberman and Leopold<sup>7</sup> produced pneumonia in thirty-six dogs; eighteen were used as controls and eighteen were treated by artificial pneumothorax. Of the treated dogs fifteen recovered and three died and two of these three deaths were thought to be due to an-

other cause. In the group of untreated dogs, five recovered and thirteen died. European clinicians report forty-seven recoveries and three deaths in cases of unilateral lobar pneumonia treated by this method. It is important that only unilateral cases of pneumococcic lobar pneumonia be treated by this method according to Stengel. Myers<sup>8</sup> reviews the origin of pneumothorax therapy and outlines the different diseases in which it is used. Stewart<sup>9</sup>, who advocates the use of diathermy in pneumonia, states that it has a sound physiologic basis, reduces the average mortality some seventy per cent, and is well worth further clinical trial. It is advised as an adjunct and not to supersede other therapy.

The literature on tuberculosis emphasizes early recognition and early treatment with collapse therapy, even in mild cases.

Total thyroidectomy for angina pectoris and congestive heart failure is probably the outstanding advance in cardiology during the year. This treatment is advocated on the following physiologic basis. Body metabolism determines the velocity of the blood flow. In hyperthyroidism with a normal cardiac mechanism the blood velocity is increased, and in myxedema it is decreased. However, in decompensated heart disease the blood velocity is decreased while the metabolic rate is normal. It was suggested that the way to relieve the circulation was to decrease the load on it by removing the entire thyroid gland, and thereby lowering the basal metabolic rate. This procedure was carried out on seventy-five patients and reported by Blumgart, et al.,<sup>10</sup> to have given excellent results. They conclude that the beneficial results warrant the further application of this procedure in patients who, in spite of all available medical procedures, are incapacitated. Weinstein, Davis, Berlin, and Blumgart<sup>11</sup> believe the early relief of pain and hyperalgesia in these patients is due to the interruption of afferent nerve impulses from the heart at the time of operation, and that the later permanent relief of pain is due to the lessened work of the heart after the development of the hypothyroid state. Levine<sup>12</sup> feels that in dealing with the problem of angina the removal of the thyroid gland has at least one important effect entirely independent of changes in metabolism, somehow related to reflex or humoral alterations, possibly linked up with the adrenal glands. The value of this procedure is yet to be determined after more patients have been treated and follow-up records made. The operation should be advised in cases selected according to the suggestions of Blumgart, Levine and others. In order that the method may have a fair trial, absolutely hopeless



cases should not be chosen. This development in therapy appears to be a real contribution.

Since the advent of fourth or anteroposterior leads in electrocardiography in 1932 a great enthusiasm for various unusual leads has occurred even to the point of using nine different leads. The use of the fourth lead is an added confirmation in most cases rather than a necessity according to Barnes.<sup>13</sup> He believes that the majority of cases of acute myocardial infarction can be identified by observing the RS-T segments in leads I and III combined with the changes in the Q waves observed by Wilson and his associates.<sup>14</sup> In England interest is centering around x-ray and fluoroscopy with barium in the esophagus as an aid to complete cardiac diagnosis.

Hematologists, Lassen and Lassen,<sup>15</sup> and others have refuted the tentative suggestion of Strauss and Castle that the extrinsic factor in the etiology of pernicious anemia was Vitamin B<sub>2</sub>. Substances, such as brewer's yeast and marmite containing Vitamin B<sub>2</sub>, also contain small amounts of the extrinsic factor which is responsible for the previous suggestion that Vitamin B<sub>2</sub> itself was the extrinsic factor. Dr. Castle in reviewing the manuscript of Lassen's article states that he is fully prepared to relinquish the suggestion that Vitamin B<sub>2</sub> is the extrinsic factor.

Malignant neutropenia, agranulocytosis, or agranulocytic angina, as it is variously termed, has claimed considerable attention in the past year since Madison and Squires' original work. Many case histories seem to show a direct relationship between the above condition and the ingestion of amidopyrine. However, many patients have used this drug over long periods without ill effects. Furthermore, there are many cases reported in which neither amidopyrine nor the barbiturates had been used prior to the onset of agranulocytosis. In the treatment of this condition pentnucleotide, liver extract and bone marrow have been tried with fair success. Pentnucleotide seemed to produce the best response. Strumia<sup>16</sup> reports some very encouraging results by treatment with leukocytic cream injections, but his observations await confirmation.

Herrmann<sup>17</sup> of Cincinnati advocates the use of his Pavaex boot in the treatment of obliterative arterial disease of the extremities, especially in acute forms of peripheral obstruction. This apparatus is now manufactured by a commercial company and consists of a pyrex glass boot sealed at the top above the knee by a rubber collar. The machine used in conjunction with the boot automatically causes an intermittent positive and negative pressure to be developed about the extremities

from two to four times each minute. The name Pavaex is derived from its action, namely, passive vascular exercise. De Takats<sup>18</sup> in a preliminary report of his experiences with the Pavaex apparatus has not achieved Herrmann's encouraging results. He believes, however, that the therapy is a valuable adjunct to other methods already in use.

Roth and Barker<sup>19</sup> report a definite increase in the amount of exercise necessary to produce claudication in cases of thrombo-angiitis-obliterans following treatment with skeletal muscle extracts, myoston and muscle adenosin phosphoric acid. The nature of the reaction of these products is thought to be a direct one on the muscles, supplying a deficiency due to inadequate blood flow. It is believed not to be due to vasodilatation, foreign protein, or histamine effects.

In the field of gastro-enterology, Berger<sup>20</sup> reports on the number and location of the parietal cells in the stomach. Gianturco<sup>21</sup> reports on some mechanical factors of gastric physiology, and others have reported work on gastric secretions. The etiology of ulcer still remains a problem. Rivers<sup>22</sup> believes peptic ulcer is the result of several interacting and variable factors; first, the aggressive action of undiluted juice; second, the lowered resistance of tissues due to trauma of any kind; and third, systemic factors which may increase the aggressive factor or decrease tissue resistance. Each patient presents some features of these three factors, and the amount of each must be evaluated when treating the disease. Mucin therapy as described by Fogelson, Atkinson, and Brown has had numerous advocates. The use of mucin at present is usually resorted to when standard methods of treatment fail. It is also being used in combination with alkali and dietary treatment rather than alone. Jones<sup>23</sup> of Pittsburgh reports encouraging results from the use of insulin but his observations were confined to a small group and as yet have not been confirmed.

Gastritis, as seen by the gastroscope, is apparently common in Europe, but not in this country if we are to judge by the reports appearing in the American literature. The syndrome of irritable colon and unstable duodenum are better understood than formerly.

Opinions in regard to medical versus surgical treatment of peptic ulcer have changed in the past year with a resultant decrease in the number of patients undergoing operations. Holst states that internal treatment and surgical treatment should supplement each other rather than compete. The general trend in ulcer management at present is to consider the patient as a whole rather than concentrating on an anatomic defect in the stomach

or duodenum with its associated changes in gastric secretion.

Carnett<sup>24</sup> reiterates his belief that pain and tenderness occur far more frequently in the abdominal wall than in the abdominal viscera, and that palpation over relaxed muscles fails completely to differentiate parietal from visceral tenderness. He advises palpation while the patient tenses the abdominal muscles and the use of pinch and pin tests to help in the diagnosis before a laparotomy is done. In line with this is Libman's<sup>25</sup> report on sensitivity to pain as noted during thirty years by use of the Libman test. This test consists of, first, pressing against the tip of the mastoid bone and then slipping the finger forward and pushing against the styloid process. Pressure on the normal mastoid bones causes no pain and thus serves as a control. Rubbing the mastoid, however, may cause pain similar to rubbing the periosteum of any bone. Pressure in the direction of the styloid process is painful to some individuals and not to others, and thus serves as the basis for classifying patients as sensitive or hyposensitive. Libman believes that in the sensitive group of patients the impulses travel more directly into the central nervous system. This test, if confirmed by others, will become a valuable asset in estimating a patient's pain response.

Although reported in 1933 by Wangenstein, et al., the nasal catheter suction siphonage for post-operative distention and distention due to other causes, has been successfully used by many surgeons in the past year. It is a definite addition to the armamentarium of the physician who encounters abdominal distention.

The hepatotoxic effects of cinchophen have been frequently reported with excellent reasons, for many proprietary products contain cinchophen not always noted on the label.<sup>26</sup>

Joslin,<sup>27</sup> working with the Metropolitan Life Insurance Company, studied the incidence and mortality statistics on diabetes, and reports that the incidence of the disease is materially increasing in spite of the advent of insulin therapy. Diabetic acidosis may produce abdominal symptoms simulating an acute surgical condition according to McKittrick.<sup>28</sup> He states that a history of malaise, drowsiness, vomiting, diffuse abdominal pain, associated with widespread tenderness and spasm is so suggestive of diabetic acidosis, without demonstrable intra-abdominal pathology, that operation should not be done unless abdominal symptoms persist after three or four hours of adequate insulin treatment. Conversely, he states that a history of abdominal pain with or without vomiting, when associated with localized and definite ab-

dominal tenderness, usually with spasm, is suggestive of a surgical lesion within the abdomen in the patient with diabetic acidosis, just as it is in the non-diabetic patient, and may be an indication for immediate operation. In that rare case where definite differentiation is impossible and yet imperative, it may be safer to open the abdomen under local anesthesia than to delay further.

Diabetic treatment in the past year has shown a definite swing away from the low carbohydrate-high fat diets of Newburgh and Marsh, toward the high carbohydrate-low fat diets of Sansum. In the last two years Joslin, Geyelin, and Richardson have, in part at least, agreed to and adopted the higher carbohydrate method. An attempt to control a case of severe diabetes of long duration by total thyroidectomy is reported by Wilder, Foster, and Pemberton.<sup>29</sup> The sugar tolerance was slightly improved, but the resulting myxedema required treatment with a thyroid extract which made the final gain in tolerance very small. They concluded that the improved sugar tolerance does not justify the myxedematous state.

The true etiology of hyperthyroidism has not been solved as yet. Hurxthal<sup>30</sup> finds a definite reciprocal relationship between the basal metabolic rate and the blood cholesterol level. He believes that this finding may be used as a guide in the treatment of thyroid disease. The treatment of hyperthyroidism is divided between advocates of surgical removal and those favoring x-ray therapy. The majority, I believe, are convinced that surgical removal gives the most satisfactory results. In studying 107 cases of exophthalmic goiter, Beaver and Pemberton<sup>31</sup> concluded, as Boothby did, in speaking of jaundice in exophthalmic goiter, that in most instances the lesions in the liver appear to be an integral part of the syndrome of exophthalmic goiter, and that they are due directly to thyroid intoxication.

Of considerable interest lately have been the reports from The Mayo Clinic<sup>32 and 33</sup> on the syndrome of obesity, hirsutism, acne, weakness, amenorrhea and hypertension associated with lesions in the adrenal glands. Cushing's<sup>34</sup> pituitary basophilism syndrome, which is very similar to the above, he attributes to pituitary adenomas. Both reports present good results from treatment, directed in the former cases to removal of the adrenal gland, and in the latter to resection of the pituitary gland.

This report has of necessity been a rather sketchy review of medicine in 1934. The field is so broad that many interesting details have been omitted. No mention has been made of neurology or the recent reports on poliomyelitis because these



fields in themselves merit review in separate papers. Much work in endocrinology has also been omitted.

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## NON-TUBERCULOUS INFECTIONS OF THE CHEST\*

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The first requisite in the management of any disease is a correct diagnosis. This is particularly true in chronic pulmonary conditions. The chief differential lies between tuberculosis of the lungs and all other chronic pathology of the respiratory tract. The ancient dictum "to treat the condition for a time as tuberculosis" is certainly obsolete when, by modern methods of investigation, it is perfectly possible to arrive at an accurate diagnosis by the use of the following procedure:

### THE DIAGNOSIS OF PULMONARY TUBERCULOSIS BY THE CASE ANALYSIS METHOD

#### I. The case history:

1. Family history of tuberculosis; or other contact with tuberculosis.
2. Past medical history of illness suggesting tuberculosis.
3. Clinical symptoms—hemoptysis and pleurisy with effusion.

#### II. The physical examination of the chest:

1. Inspection.
2. Palpation.
3. Percussion—localized densities.
4. Auscultation—moist râles.

#### III. The laboratory reports:

1. The sputum—B.Tbc. present.
2. The x-ray—localized "mottling."
3. The tuberculin reaction.
4. The blood examination.

This illustrates the practical use of the case analysis method in which consideration of the obtainable data, particularly the cardinal points, makes it possible to determine definitely whether or not pulmonary tuberculosis is the chief etiologic factor in the patient's disability.

### CRITERIA FOR CLASSIFYING PULMONARY TUBERCULOSIS

#### I. Clinical Tuberculosis:

Any one or more of the following:

1. Persistent moist râles above the second rib.
2. Parenchymatous x-ray lesion.
3. Tubercle bacilli in the sputum.

\* Presented before the Eighty-third Annual Session, Iowa State Medical Society, Des Moines, May 9, 10, 11, 1934.

4. An unexplained history of hemoptysis.
5. An unexplained history of pleurisy with effusion.

## II. Suspected Tuberculosis:

1. No persistent râles above second rib.
2. X-ray negative or indefinite lesion.
3. Tubercle bacilli never found in sputum.
4. A history of unexplained hemoptysis.
5. A history of unexplained pleurisy with effusion; but not both 4 and 5.

## III. Non-tuberculous:

1. No persistent râles above second rib.
2. X-ray film is negative.
3. Tubercle bacilli never found in sputum.
4. No history of unexplained hemoptysis.
5. No history of unexplained wet pleurisy.

## IV. Primary Tuberculosis: (Childhood Type)

1. Typical reaction to Mantoux test;
2. X-ray evidence of primary nodule.

An exact classification according to the above chart is essential. It is readily made by a critical study of all the available evidence. A definite opinion may then be expressed according to the information obtained in any given instance. Cases of "suspected tuberculosis" should be reclassified after a period of observation.

A glance at the record of the condition of patients on admission to our State Sanatorium furnishes ample proof that diagnosis came too late in most cases and that, even then, proper and adequate treatment was frequently unduly delayed. The physician should not bear unmerited blame for the failure to obtain an early diagnosis, as it is obviously necessary that the patient present himself sufficiently early so that the medical examiner may obtain the essential data upon which to base an opinion whether or not the suspected individual is actively tuberculosis.

During Dr. Edwards' superintendency at Oakdale, a period of three and one-half years, ending January 1, 1934, 825 patients were admitted to the sanatorium. The classification, according to the stage of tuberculosis, was as follows:

### PROGRESS OF DISEASE ON ADMISSION OF PATIENTS

Minimal .....	78 or	9.45%
Moderately advanced .....	158 or	19.15%
Far advanced .....	522 or	63.27%
Clinically non-tuberculous..	67 or	8.13%
Totals.....	825	100.00%

A reflection upon our diagnostic ability may be noted when we consider that in this short period of time, 67 patients were sent to the State Sanatorium who did not qualify for treatment there.

During the above mentioned period, 789 patients were discharged from our State Sanatorium. The condition on discharge gives very significant information relative to the prospective benefit which may be expected from the very best treatment in a special institution for the tuberculous:

### PHYSICAL CONDITION OF PATIENTS ON DISCHARGE

Arrested .....	103 or	13.05%
Apparently arrested .....	30 or	3.80%
Died in Oakdale.....	240 or	30.42%
Left against advice.....	416 or	52.73%
Totals.....	789	100.00%

These statistics are a convincing argument that the present-day treatment of pulmonary tuberculosis is not entirely satisfactory. They compel critical evaluation and analysis of our methods, in justification of the discouraging results quoted above from our excellent State Sanatorium. Notwithstanding this apparent failure to obtain a gratifying percentage of recoveries, tuberculosis specialists generally are strong proponents of the institutional care of tuberculous patients. Sanatorium treatment not only prevents the infection of associates in the household, but the clinical results are much superior to the expectancy under the usual home or climatic regimen.

### CLINICAL TYPES OF PULMONARY TUBERCULOSIS

1. Healed fibrotic lesions
2. Calcified primary type
3. Quiescent with cavitation
4. Fibro-ulcerative lesion
5. Exudative phthisis
6. Acute forms

Before any form of therapy is instituted it is necessary to consider carefully the type of pulmonary tuberculosis present. This classification will be found very helpful in drawing accurate conclusions regarding the need for prompt and aggressive treatment, or whether close medical supervision may be all that is necessary, pending more prolonged observation of the progress of the disease.

The prognosis in any given case should be determined in advance, as nearly as possible, from a study of those intricate factors upon which the patient's recovery depends. The following points will be helpful in forming an estimate of the probability of recovery and the time required to obtain optimal results:



## THE PROBABLE TIME OF RECOVERY (PROGNOSIS)

Depends upon:

1. The extent of lung involvement
2. The clinical activity
3. The age of the patient
4. The quality of the treatment
5. The individual and racial resistance.

The diagnosis of active pulmonary tuberculosis requiring treatment having been settled, the type of the disease present definitely determined, and a decision regarding the probable prognosis made, the next step is to make definite plans concerning the technic of therapy indicated in the particular case. If the patient accepts immediate sanatorium care, which is far preferable in the majority of instances, our responsibility is terminated; but for the patient who elects for various reasons to undertake the cure at home, an intensive campaign of patient education and medical management must be instituted. An outline of the most important agencies in successful treatment follows:

## BASIC FACTORS IN TREATMENT

Primary: Rest, morale, medical care.

Secondary: Diet, drugs, surgery.

In comparatively recent years the rapid development of surgical procedures in pulmonary tuberculosis has caused an entirely new chapter to be written, advocating more rational means of applying the essential element of rest to the incapacitated lung. These relatively modern methods of establishing partial or complete mechanical immobility of the diseased lung are now accepted as the greatest advance in therapy since the value of *rest* has been fully recognized. The operative procedures of choice are induced or artificial pneumothorax, phrenicneurectomy or phrenic exeresis, and extrapleural thoracoplasty. There are other surgical measures which might be mentioned but these three comprise the great majority of the medico-surgical methods in routine use.

Excluding consideration of acute diseases of the respiratory tract, there are many chronic non-tuberculous pulmonary conditions which present difficult diagnostic problems. This discussion shall be limited to a few of these in the light of the previous remarks, chiefly concerning the necessity for careful systematic differentiation from chronic pulmonary tuberculosis.

## I. BRONCHIECTASIS

The most common chronic pulmonary disease, with the possible exception of tuberculosis, is bronchiectasis, which is apparently much more prevalent than was formerly suspected. It occurs most frequently in childhood, although adults are

by no means exempt. The usual predisposing cause is bronchopneumonia, but a reliable history of pneumonic infection is not always obtainable. The pathognomonic symptom in a well-established case is a chronic cough, chiefly nocturnal or early morning, with profuse expectoration of purulent or muco-purulent sputum, often in large quantities. The general health is usually not seriously impaired, the fever is low-grade, and the pulse is not particularly rapid. Careful auscultation of the chest should elicit coarse râles, either unilateral or bilateral, which are rarely heard in the upper lobes. Examination of the sputum fails to demonstrate tubercle bacilli, but mixed pyogenic bacteria in large numbers are usually found. The leukocytosis is moderate and in very chronic cases there may even be a decrease in the number of white cells. Secondary anemia is a frequent complication. The diagnosis can generally be made from the history and above findings but is confirmed by the intratracheal injection of iodized oil which, on the x-ray film, shows dilatations and sacculations of the lower bronchial tree.

The treatment of bronchiectasis is not entirely satisfactory, but considerable benefit may be obtained by systematic postural drainage. In the most convenient inverted position, three or four times daily for many months. This method serves to facilitate removal of the accumulated secretions and gives the pulmonary process a better chance to heal. Many clinicians, such as Pritchard of Battle Creek, advocate prolonged bed rest, but it is extremely difficult to convince a patient who is not really sick that he must adopt a strict rest regimen. It is very important that focal infections about the upper respiratory tract be cleared up, as such foci seem to promote continuation of the infection in the lung. The only drug of proved value is iodine, preferably given as iodides or in the form of the syrup of hydriodic acid. Vaccines, either mixed or autogenous, were formerly extensively used, but after long experience have been regarded of little benefit. Iodized oil therapy has been largely abandoned. Many surgical procedures have been advocated, such as compression by induced pneumothorax, partial or complete lobectomy and occasionally thoracoplasty, but these extreme measures are rarely indicated. Perhaps the most useful form of therapy is the weekly or bi-weekly aspiration by means of the bronchoscope. A definite cure is not often obtained, but the patients are markedly benefited symptomatically and not infrequently are restored to lives of usefulness. The profession should be warned not to promise recovery from any form of treatment as, from a clinical standpoint, results are commonly disappointing.

## II. LUNG ABSCESS

Lung abscess is often confused with bronchiectasis, the chief points of differentiation being the more sudden onset in abscess, the more serious illness, the marked leukocytosis in acute cases, the definite localization, often with a smooth border on the x-ray film and frequently a history of recent surgical procedures on or about the upper respiratory tract. A tentative diagnosis of abscess should be confirmed by an x-ray examination which demonstrates a localized density, usually in a lower lobe of the lung.

The treatment of lung abscess differs from the tentative measures applied in the care of bronchiectasis in that the bronchoscope should be resorted to without delay. The bronchus is commonly occluded by swelling of the mucosa or by inspissated pus which prevents free drainage. Occasionally paracentesis through the chest wall into the abscess may permit aspiration of the contents with recovery, but there is real danger of infecting the pleura, which is always an undesirable complication. Spontaneous rupture through the bronchial system is not unusual and frequently results in sufficiently adequate drainage to produce an excellent recovery. Less commonly the abscess, if located near the periphery of the lung, may rupture into the pleural cavity, thereby converting a pulmonary abscess into an empyema. In such cases, prompt surgical drainage is urgently indicated.

## III. PULMONARY MALIGNANCY

Primary malignancy of the lung occurs much more frequently than earlier statistics would indicate. Usually diagnosed too late, it has then become a hopeless condition. Some early cases of bronchogenic carcinoma may be recognized by bronchoscopic investigation and histologic study of tissue removed at biopsy. It is occasionally possible to remove all the tumor via the bronchoscope with apparently favorable results. Early diagnosis is therefore most imperative.

Treatment is very unsatisfactory. Deep x-ray therapy is indicated in such cases although the benefit is usually only temporary.

## IV. BRONCHOMYCOSIS

Another interesting pulmonary lesion has been recognized in recent years as a definite disease entity. Mycotic infections are known by many different names, dependent upon the causative organisms. No doubt fungus infections of the lungs are much more common than reported cases would indicate. They often occur as secondary invaders in chronic pulmonary tuberculosis and bronchiectasis.

The specific treatment is the administration of

potassium iodide in maximum doses over a long period of time, but the clinical effect of this medication is commonly disappointing. Climatic change is frequently advised, and often tried, usually without benefit.

## V. PNEUMOCONIOSIS

Pneumoconiosis occurs as the result of occupational hazards, hence in certain trades must always be considered. Stone cutters, abrasion grinders, coal miners and like workers are chiefly victims of the pulmonary fibrosis due to metal or mineral deposit in the lungs. A reaction inflammation ensues as a result of the irritant producing extensive fibrosis in both lungs.

There is no effective treatment except a change of occupation which may arrest the progress of the process. The condition is compatible with long life if the pulmonary changes are not too extensive. Coexisting anthracosis and pulmonary tuberculosis present a diagnostic problem almost impossible to solve.

## VI. PULMONARY FUSO-SPIROCHETOSIS

The fuso-spirochetal lesions in the lungs have recently attracted considerable attention and must be regarded as serious pathologic states. The symptoms are essentially the same as for mycotic infections, but are usually more severe, characterized by cough, expectoration, chest pain, fever and occasionally hemoptysis. The Vincent's spirillum can constantly be recovered from the sputum by careful laboratory methods and identification is not particularly difficult. With suggestive clinical symptomatology, the presence of Vincent's infection of the pharynx or dental structures is strong corroborative evidence that spirochetal disease of the bronchi is present. Pulmonary abscess is not infrequently due to Vincent's infection as observed in a recent case.

Local treatment is confined to the extirpation of the infection in the mouth or throat by means of chromic acid, arsenicals, or, in mild cases, by oxidizing agents such as hydrogen peroxide and sodium perborate. The administration of arsphenamine, intravenously, is the most effective general treatment and is frequently followed by a brilliant therapeutic recovery.

## VII. PULMONARY ATELECTASIS

Massive collapse of the lung occasionally follows operations, chiefly abdominal. The patient has sudden dyspnea and cyanosis, associated with chest pain and alarming clinical symptoms, sometimes collapse and shock. Many instances of recovery without treatment doubtless occur. The simple procedure of rolling the patient on the



contralateral side is often sufficient to expel the obstruction, producing immediate re-expansion of the collapsed lung.

Much has been learned regarding the diagnosis and treatment of pulmonary disease since the x-ray, the bronchoscope, the microscope, the pneumothorax apparatus, and improved surgical equipment have been added to our armamentarium. These mechanical devices are useless, however, without painstaking effort and the exercise of that "clinical sense" so essential in the successful practice of medicine.

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### THE SURGICAL TREATMENT OF PULMONARY INFECTION\*

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The problems produced by injuries of the chest from shell fragments and bullets during the World War, together with the world wide spread of the so-called "influenza epidemic" in 1918 with its grist of empyemata and pulmonary infection, challenged and stimulated surgeons to new attacks upon the thoracic cage. The development of thoracic surgery has been rapid but fundamentally sound, under the leadership of such men as Brauer, Sauerbruch and Tuffier on the European continent, Archibald of Canada and Willy Meyer, Graham, Hedblom and Alexander in this country. The development of surgical treatment of pulmonary tuberculosis has been one of the brilliant chapters in surgical advance.

#### PULMONARY TUBERCULOSIS

The basic aim of the treatment is to compress the involved lung so as to render it functionally inert. As a very important by-product of compression, existing cavities are obliterated. Healing then takes place through the natural power of the patient to overcome the tuberculous infection. Patients must be critically selected for surgical therapy. The following procedures are most commonly used:

A. *Phrenicectomy*: Exposure of the phrenic nerve is made where it lies upon the scalenus anticus muscle at the base of the neck. The nerve is avulsed. Paralysis of half of the diaphragm follows and it rises from one to four interspaces in the thorax and compresses the lung. Phrenicectomy is indicated: first, as a first stage of a planned thoracoplasty; second, as possibly the only necessary surgical procedure in cases with a well isolated tuberculous cavity; third, in selected cases under treatment by induced pneumothorax where adhesive bands restrict adequate compression of

the lung; and fourth, in cases of protracted or recurring hemoptysis where adhesions prevent pneumothorax therapy.

B. *Pneumolysis*: In certain cases under treatment by induced pneumothorax, it is found impossible to compress the lung completely and effectively because of cord or band-like adhesions which pass from the lung surface to the chest wall. If these are of limited size and number, their division at the chest wall attachment may be indicated, to free the lung and permit of its compression by pneumothorax. Closed pneumolysis is performed through a specially constructed instrument passed into the chest cavity through a rib interspace. The attack is visualized by means of a second tube, the thoroscope, which enters the chest cavity at another point. Open pneumolysis is performed through an incision carefully placed in relation to the adhesions so that they can be divided under direct vision. In either type of operation electrocoagulation and cautery is best employed. The inherent dangers of pneumolysis are pyogenic or tuberculous empyema and tension pneumothorax.

C. *Extrapleural Thoracoplasty*: An ideal case for thoracoplasty will be one in which: the patient has failed to "arrest" the disease under an intensive conservative regime, preferably in a sanatorium; the active disease is limited to one lung; pneumothorax therapy is not possible because of adhesions; there is no visceral, osseous or peritoneal involvement; and the patient is between eighteen and fifty years of age. If these requirements are not adhered to, the results are likely to be disappointing. The operation consists of resecting, subperiosteally, segments of ribs from the first to the eleventh inclusive, in the most posterior portions. The procedure is completed in two to several stages, depending upon the patient's condition, under novocaine infiltration or gas (ethylene, nitrous oxide) inhalation anesthesia. The hemithorax becomes markedly decreased in all of its axes, and the lung correspondingly compressed, rendering it functionally inactive and obliterating any cavities which may be present. Selective thoracoplasty may be indicated where the tuberculous process is limited to the apical region. Long segments of the upper three to six ribs are resected. As in the complete thoracoplasty, phrenicectomy is usually indicated in addition.

#### NON-TUBERCULOUS PULMONARY INFECTION

This condition presents different and, in many respects, more difficult problems in regard to surgical therapy. While the lung has an inherently great power to combat successfully any acute pyogenic infection of its parenchyma, there is little tendency for chronic suppurative processes to sub-

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side spontaneously even though the lung is rendered functionally quiescent. Pulmonary sepsis occurs, not infrequently, as a complication of operations. Prophylactic measures to prevent such infection should be constantly in force.

*Aspiration Pneumonitis:* Tonsillectomy and teeth extraction under general anesthesia are among the most common causes of pulmonary suppuration, due to the aspiration of blood and bits of foreign material. Vomitus and mucus may be aspirated during the recovery from any general anesthetic. Do not operate upon the throat, nose or mouth under general anesthesia unless the patient's head is lower than his chest. Do not permit a patient who is regaining consciousness from an anesthetic to inhale vomitus or mucus.

*Postoperative Atelectasis* (massive collapse): This is usually caused by the occlusion of a bronchus by dried, tenacious mucus which the patient has failed to cough up during the early postoperative days. Atelectasis may lead to pulmonary suppuration. It can be prevented by demanding that the patient take frequent deep breaths as soon as he is conscious following any operation, and during the early critical postoperative days, and by having his position in bed shifted frequently. Atelectasis often simulates pneumonia, but the heart tends to shift toward the affected side.

If atelectasis develops keep the patient on his unaffected side; slap the posterior surface of the chest sharply over the affected lung to dislodge the mucus plug; and urge the patient to cough and to breathe deeply.

#### SOLITARY LUNG ABSCESS

An acute lung abscess should not be attacked surgically. Under conservative measures spontaneous resolution usually takes place. A chronic lung abscess, well localized and containing fluid pus, may necessitate incisional drainage through the chest wall. Careful roentgenologic study to localize the process in relation to the chest wall is essential. A "lung mapping" may be helpful. Do not aspirate a lung abscess through the chest wall. By so doing you may infect the free pleural cavity. Induced pneumothorax may be effectively used in selected cases: first, when the abscess is deeply situated in respect to the chest wall; second, when the pleural space is not obliterated; and third, when communication exists between the abscess and the bronchial tree. In a peripherally located abscess, a "blow out" of the abscess into the pleural space may occur if pneumothorax treatment is used, and a dangerous pyopneumothorax then develops.

Surgical drainage of a lung abscess may be carried out as follows: make an adequate incision at the most direct point of attack, and resect gener-

ous segments of one or more ribs, subperiosteally. Do not tear the pleura. Study the pleura. If the lung can be seen to move freely beneath the parietal pleura, the pleural space is not obliterated. Do not drain the lung abscess now. Place strips of iodoform gauze in the rib beds against the pleura and close the incision in layers over the gauze. After four to ten days, depending upon the emergency which presents, the incision is reopened and the gauze packs removed. The pleural surfaces will be fused. Make a short incision in the rib bed through the periosteum and parietal pleura to expose the adherent lung. Insert a medium sized aspirating needle with syringe attached, into lung substance and slowly advance its point toward the abscess. When the abscess is entered, the resistance against the needle suddenly stops. Aspiration yields creamy pus or air, usually of foul odor. Having entered the abscess, pass a grooved director along the needle and withdraw the latter. A tract is now made with the director as guide, using a hemostat by Hilton's method, or preferably, by means of the actual or electrocautery. Remove blood clots and clumps of necrotic lung tissue from the abscess cavity and drain with one or more soft rubber tubes of good calibre. Do not close the incision snugly around the tubes. If the pleural space is found obliterated at the first operation, drain the abscess immediately.

#### BRONCHIECTASIS

*Compression therapy:* Surgical treatment for this form of pulmonary involvement has given uncertain, and for the most part, unsatisfactory results. This is due to the fact that bronchiectasis is usually only a part of the pathology. It is commonly associated with fibrosis and suppuration of the lung parenchyma in varying degree. In the relatively few cases with large bronchiectatic cavities and a minimal amount of fibrosis of parenchyma compression therapy may be effective. The lung must be compressible. Phrenicectomy, or pneumothorax, or a combination of the two will sometimes be sufficient if the process is limited to a lower lobe. Complete extrapleural thoracoplasty may be necessary to obtain adequate compression. Adequate compression of the affected lung may be followed by a marked decrease in the daily sputum output. In cases of bronchiectatic cavities in association with chronic suppurative pneumonitis, compression therapy fails. The lung is not compressible and is only displaced, together with the mediastinum, toward the opposite side. The patient may be made worse.

*Lobectomy:* Removal of the diseased lobe in cases of chronic suppurative pneumonitis limited to a single lobe is the ideal treatment for which



surgery has been striving. During the past decade the operation of lobectomy has been successfully performed with increasing frequency. Many of the technical problems are being solved, but as yet the procedure has not been standardized. Today, lobectomy may be performed by a trained thoracic surgeon with no greater risk and with better prospect of permanent benefit than obtains in the performance of many commonly accepted operations. A patient selected for lobectomy should meet the following requirements: first, have a single lobe involvement as proved by accurate "lung mapping"; second, have failed to respond satisfactorily to well ordered conservative management, (this will include bronchoscopic drainage in most cases); and third, be a proper surgical risk.

Lobectomy may be performed as a single procedure, or the operation may be divided into stages. Today the latter offers the best prospect for recovery. Further advances in the technic of one stage lobectomy may determine its superiority. The one stage operation consists of a long thoracotomy wound in the seventh or eighth intercostal space. If adhesions are present between the affected lobe and the adjacent lobes, chest wall or diaphragm, these are divided. The pedicle of the lobe is freely exposed and the lobe branch of the pulmonary artery and vein securely ligated. The lobe bronchus is ligated independently, clamped distal to the ligature and divided between, aseptically, to avoid infection of the pleural cavity. The tied bronchial stump is then covered over with pleura by stitch. The incision is closed securely and drainage by the "closed" method is provided through an intercostal stab wound into the dependent posterior portion of the pleural cavity.

In a multiple stage lobectomy the incision is the same. Long segments of the adjacent ribs may be removed for greater exposure. If the pleural space is free, the entire surface of the pleura, both parietal and visceral, is gently wiped with a gauze sponge to irritate it actively. The affected lobe is enveloped by a single layer of a large piece of gauze, the free ends of which are brought out through a stab wound. The incision is then closed securely in layers, with closed drainage by a tube through a second stab wound. As the incision is closed, the lung is completely re-expanded by the anesthetist. After ten to fourteen days the incision is re-opened and the gauze removed from around the diseased lobe. It will be readily mobilized. The uninvolved lung will be snugly adherent to the chest wall and is left undisturbed. A heavy catgut or silk ligature is thrown around the lobe pedicle and securely tied. The incision is re-sutured in part, but ample drainage is provided to the ligated lobe through the incision and through

the posterior stab wound. The ligated lobe becomes slowly necrotic and either disintegrates to come away through the drainage opening spontaneously, or sequesters as a solid mass. In the latter case the wound should be partially re-opened and the mass lifted out. A chronic empyema "rest cavity" forms where the lobe had been. A bronchial fistula at the site of the ligated pedicle usually forms. The cavity tends to heal progressively and the bronchial fistula closes in consequence. Phrenic nerve interruption, before or after the major procedure, aids in the closure of the cavity.

*Pneumectomy:* Certain cases of chronic pulmonary suppuration involve the entire lung in one or the other hemithorax, and with complete freedom from disease of the opposite lung. As in single lobe involvement, the ideal treatment consists of extirpation of the diseased lung. This procedure has been successfully carried out in three reported cases during very recent years. Pneumectomy will require an extensive thoracoplasty, before or after the major attack, to obliterate the large thoracic cavity which remains when its lung content has been removed.

#### SUMMARY

1. Compression therapy induced by selected surgical procedures is indicated in favorable cases of pulmonary tuberculosis. Brilliant results are obtained in a high proportion of carefully chosen cases.

2. Pulmonary infection not uncommonly follows the aspiration of blood or tissue in operations upon the upper respiratory tract, or of vomitus and mucus in patients recovering from general anesthesia.

3. Pulmonary infection sometimes occurs because of the development of atelectasis as a postoperative complication due to the plugging of a bronchus from dried mucus.

4. Pulmonary infection as a postoperative complication, due to aspiration or atelectasis, can be practically eliminated by routine prophylactic measures.

5. Acute lung abscesses should be treated conservatively, because they tend to subside spontaneously.

6. Chronic lung abscesses will usually demand drainage through the chest wall.

7. Bronchiectasis is usually accompanied by marked pathologic changes in the lung parenchyma.

8. Compression therapy in bronchiectasis fails except in those few cases in which the involved lung is compressible.

9. Lobectomy is the ideal treatment in chronic suppurative pneumonitis with bronchiectasis, where the involvement is limited to a single lobe.

10. Total pneumectomy has been successfully performed in three reported cases for multilobar unilateral chronic pneumonitis.

11. The operation of lobectomy has advanced to the point where it should be given due consideration in the treatment of chronic pneumonitis with bronchiectasis.

### THE TREATMENT OF EMPYEMA\*

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The immediate problem in the treatment of empyema is to save life and insure early healing; and, secondly, to prevent chronic cavitation with suppuration. If the latter condition occurs, the problem is to cure the persisting sinus. Chronic cavitation with suppuration will follow relatively infrequently, if the acute stage of empyema has been well treated.

The bacteriology of the pleural infection is the deciding factor in the method of treatment. This can be determined fairly accurately by the gross appearance of the pleural fluid and the history of the case, when the services of a bacteriologist are not at hand. If aspiration reveals thin pus and streptococci, caution is needed because the pleural infection in these cases is coincident with a lung infection, and is of the nature of a bronchopneumonia of streptococcal origin. If pneumococci are found and the pus is thick and creamy, the patient has recovered from the acute stage, and in all probability the pleural cavity is well walled off.

A difference of opinion prevails as to the procedure for the evacuation of the pleural fluid. Prior to the World War the open method was used generally; but due to the poor results of this method in the early stages of influenzal empyemas of war time, the findings of the empyema commission, and the researches of Graham and Bell, a more conservative procedure became popular. This is true especially in streptococcal empyema which usually follows an influenzal pneumonia. This pneumonia is characterized by early pleural infection and slowness in walling off. The mortality is high if opened early (before adhesions have walled off the cavity), owing to the entry of air into the pleural cavity and the occurrence of the "mediastinal flop" in an already embarrassed respiratory condition. Probably no one at the present time advocates the production of an open pneumothorax early in the course of streptococcal empyema. Even those surgeons who employ the open method, use preliminary aspiration until the character of the pleural fluid has changed indicating that the mediastinum has become fixed. Pneumococcal empyema is the most common and has

the lowest death rate. It is characterized by the formation of a large amount of fibrin with pus walled off early and firmly.

The guiding principles in the treatment of acute empyema are: first, pus must be evacuated; second, the pleural infection must be controlled; and third, the cavity must be obliterated. The case is not cured until the cavity is closed. However true this may be generally, it is well to wait until it is well walled off. When is the cavity walled? Hippocrates said an empyema should be drained on the fifteenth day. A generation ago, it was customary to wait until the pus was thick and creamy—"laudable" pus, it was called. Neither dictum can be much improved. If the pus is thin, in all probability it is not properly walled off, and it is better to wait until it thickens, then one can be sure of localization. If the fluid is profuse it can be aspirated and reaspirated as it accumulates, until it becomes of the desired consistency. This is most necessary in streptococcal infections. In this type of case aspiration is not only diagnostic and of palliative therapeutic value, but may even be curative if there is low virulency. Graham reports ten to fifteen per cent cures, but in general, aspiration is not reliable and leaves the pleura greatly thickened.

When there is a large amount of pleural fluid, the site of the opening is usually in the eighth or ninth interspace in the posterior axillary line. If the collection of fluid is local, or if there is an interlobar empyema, the incision should be made over the site of the exploratory needle puncture. The location of an encysted interlobar empyema is made much more definite by use of x-ray pictures—both stereoscopic and lateral views.

In the open method of drainage, we make it a positive rule to aspirate just before making the incision and again after the rib resection before opening the parietal pleura. The drainage tube is placed in the cavity and stitched in position. If the closed method of drainage is to be used there are several variations in technic. Some surgeons advise the usual rib resection and exploration of the pleural cavity with the finger, mopping out all clots of fibrin; then making a stab wound at the most dependent point of the cavity through which a drainage tube is passed and made air tight by use of a large cork and collodion, or adhesive tape. The first wound is sutured. The free end of the tube is then put under water, or an antiseptic, in a bottle fastened to the bed. Each breath and cough will force pus into the bottle and its place will be taken by expanded lung. In this way, too, air that was admitted into the cavity during operation will be expelled. When all the fibrin has been carefully removed and the drainage tube is kept

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air tight, the cavity will heal in a fortnight in many cases. Some surgeons, who use the closed method, introduce the drainage tube with a trocar. Others supplement this system by instillations of an antiseptic into the pleural cavity by use of a "Y" tube connection, and maintain drainage with negative pressure by means of a Potain aspirator. This method seems ideal.

The combination of aspiration of the pleural fluid and intrapleural introduction of air, has been advocated by Elias and Danna. This is called the aspiration and pneumothorax method of treating empyema. The advantages claimed by its advocates are: that it is a quick and safe method to relieve both toxemia and pressure without shock or reaction; that it gives physiologic rest to the lung, and that all the pleural fluid can be withdrawn because the air pressure will force it to the lowest point and no expanded lung can come in contact with the exploring needle.

The various closed forms of drainage are satisfactory when they work. It may be said in general, that everything else being equal, closed drainage is theoretically the ideal procedure in that it is much more physiologic than the open method. Ideally closed drainage results in an evacuation of the pleural fluid without the production of an open thorax, maintaining at all times the normal negative pressure, thus favoring the re-expansion of the lung. Practically, however, ideal as closed drainage may appear, it has definite disadvantages. It is the ideal method of treatment in institutions where adequate help is available to keep the drainage system functioning. Even then the system often becomes plugged with fibrinous masses, or is accidentally disconnected. Therefore, open thoracotomy accomplished by rib resection is the better procedure where proper supervision is not possible. It is a more "fool proof" method.

The control of the infection of the empyemal cavity is important. Dakin solution seems to be the universal antiseptic in both the open and the closed methods. It also dissolves fibrin from the walls of the cavity, thus preventing thick fibrous membrane which would interfere with the re-expansion of the lung. Granulations are kept clean and secondary infection is at a minimum. In the open method Dakin solution can be instilled into the cavity through a small secondary opening at the upper limits of the cavity; or, by passing a catheter through the drainage tube and bringing it above the dressings where the solution may be instilled at regular intervals by the nurse. In the closed system, the use of the "Y" tube easily allows irrigation, which should be continued until the cavity is obliterated.

It is evident that no one method of treatment will always give uniformly good results. No attempt should be made to make a case fit a given method of treatment. On the contrary, that treatment which will most likely restore the patient to health in the shortest time, should be adopted. Individualization is the keynote to successful treatment. This principle holds good especially in treating empyema of children. Here a study of the variable etiology, the pathology of the process, and the general condition of the patient must be considered carefully. An etiologic diagnosis will determine the procedure in treatment.

Treatment of chronic cavitation with suppuration will not be discussed. These cases should be referred to surgeons doing radical chest work. The best treatment is prevention, which can be realized in a large percentage of cases by the proper treatment of acute empyema.

During the last eleven years we have treated twenty-two cases of empyema, the patients ranging from one year to fifty-six years of age. There have been two deaths, a mortality of nine per cent, which compares favorably with the death rate in larger series of cases from the large hospitals. All were operated upon by the open method with rib resection and Dakinization of the cavity. The average stay in the hospital was twenty-one days. There was no chronic cavitation. In twelve cases the empyema followed what was clinically diagnosed as lobar pneumonia; ten followed what the attending physician called bronchopneumonia or influenza pneumonia.

This experience leads me to advocate the open method of drainage with resection of the rib. It is practical, direct, the technic relatively simple, and it gives adequate drainage.

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## THE RELATIONSHIP OF BRONCHOSCOPY TO THORACIC SURGERY\*

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The greatest value of bronchoscopy is not in the extraction of foreign bodies from the air and food passages, but its use in the diagnosis and treatment of lung pathology. The ratio of foreign body extractions to therapeutic bronchoscopies is about one per cent in the larger clinics, such as Jackson's. It must be considered only as another diagnostic method, and must be coupled with physical findings, x-ray, and laboratory procedures, to be of value in selecting cases as suitable for medical or surgical care.

Contraindications for bronchoscopy are few if the procedure is really indicated; it is not advised for a moribund patient or in the presence of a massive hemorrhage or fulminating infection. Advanced cardiac disease, aneurysm and such allied conditions may make any procedure, even bronchoscopy, ill advised.

Bronchoscopy will be found of value in the diagnosis and treatment of the more common conditions of bronchiectasis, acute and chronic lung abscess, massive collapse and suspected tumors. It is of greater value in the more obscure conditions showing evidence of unexplained cough, hemoptysis and bronchial obstruction.

Pneumonography, either with lipiodol or bismuth, is of great value in mapping the extent of pathology, and not only aids in determining the best position for the patient to assume in postural drainage, but helps to classify the individual case as being suitable for medical or surgical care. The dilated portions of the tracheobronchial tree with their foul retained secretions, must be differentiated from the suppuration caused by foreign bodies, stenosed bronchi, and tumors, either benign or malignant.

There can be no question as to the value of being able to inspect directly a desired area; to obtain uncontaminated smears and cultures; and to inject the opaque medium for x-ray procedures into the portion being studied.

Lung abscess according to Jackson is a term "loosely applied to a condition of drowned lung, in which pus accumulates in the natural passages and in which there is neither a new wall nor a breaking down of normal walls." A lung abscess may result either from aspiration and blocking of air ways, or by blood borne infection, as in infarcts. When an air way is blocked the residual air in the lung is rapidly absorbed, the lung tissue collapses and becomes "drowned" by an exudate of serum, which soon becomes purulent. The clinical

picture then shows localized pneumonitis with chills, fever and prostration; the symptoms varying directly with the size of the area involved; and inversely with the age of the patient. Abscesses resulting from the inhalation of foreign bodies clear quickly after the intruder has been removed, and the air way restored to function. Abscesses resulting from other causes, especially those following surgery with general anesthesia, or operations on the mouth and throat, should be bronchoscoped as soon as the condition is suspected. The removal of the plugging material whether it be mucus, blood clot, aspirated food, pieces of teeth, tonsil or other material, will cause almost the same rapidity of recovery as those following ordinary foreign body extraction. If the process is allowed to progress weeks or months the convalescence will also be prolonged, and much more therapy is required. If an entire lobe is involved, surgical lobectomy may be indicated.

A review of work done by Alexander of Ann Arbor using the two stage lobectomy, and that done by Brunn of San Francisco using the one stage operation, shows very little variation in their mortality. The preoperative management seems to be the same; including regulated rest and exercise with bronchoscopic aspiration and postural drainage; general tonic therapy and especially setting the time of operation when the patient is at the highest possible level, physically. By selecting the time of operation at a remission of the infection they have been able to reduce the mortality from 80 per cent to about 16 to 20 per cent.

The so-called ether pneumonia is really a collapse of a lobe or lobes, and usually occurs after a long, profound ether anesthesia, where the bronchus becomes plugged with thick mucus, associated with inhibition of ciliary activity from dehydration. Operations on the upper abdomen are most likely to be followed by such complications. Here the diaphragm is fixed from pain or trauma and the already inhibited cough is further checked by the too liberal use of opiates. If rolling and change of posture do not relieve the obstruction at once, bronchoscopic aspiration should be resorted to. The relief is immediate, the temperature drops and the lungs begin to become aereated.

Tracheal and bronchial obstruction may result from the enlargement of any chest structure causing pressure on the outside of the air ways with resulting stagnation of secretions. The bronchoscopic picture is that of a dented pipe; lack of drainage and aereation will give rise to the typical picture of lung abscess if the air way is completely blocked.

Carcinoma of the lung, ordinarily of endobronchial origin, is usually of low virulence and sensi-

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tive to radiation. If an early diagnosis is made some patients can be saved by early lobectomy, and others have much relief from suffering if given massive doses of x-ray.

Cases in which the patients have had a chronic cough for years are often mistaken for tuberculosis or bronchiectasis, and it is only by direct inspection and tissue biopsy that an early diagnosis can be made, because the physical and x-ray findings are usually those of a chronic abscess.

Bronchoscopy as done by a well trained team offers a safe visual diagnostic method, without mortality; and when coupled with pneumonography clinical findings, x-ray and laboratory procedures, gives accurate information as to the cause, location, character and severity of pulmonary lesions with the opportunity to obtain uncontaminated specimens of secretions and tissue biopsy. It is as necessary to diagnosis of lung pathology as cystoscopy is to lesions of the urinary tract.

Arrest or cure of carcinoma of the lung might result more often if patients with a chronic cough and obscure diagnosis were given the benefit of bronchoscopy coupled with other diagnostic procedures.

### THE MANAGEMENT OF ALLERGIC MANIFESTATIONS OF THE NOSE AND THROAT\*

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The management of allergic manifestations of the nose and throat must be based upon a comprehensive knowledge of allergy. The rapid rate at which we live and the nervous tension under which we exist are changing our physical being, so that today more cases are being recognized as allergic in the practice of our specialty.

For the purpose of this discussion, we may offer the following definitions: Allergy, altered reactivity to substances not generally harmful; prophylaxis, favoring protection; anaphylaxis, without protection; immunity, an excess of antibodies in the blood; and sensitiveness, an excess of fixed antibodies in the tissues without the protection of circulating antibodies.

Types of allergic reactions are: migraine, vasomotor rhinitis, asthma, gastro-intestinal allergy, eczema, and angioneurotic edema.

The child is the fruit of the family tree and inherits a nervous system predisposing to allergic reactions. Females are more frequently allergic than males and the transmission is twice as common through the females. In rabbits the predominating allergic reaction is cardiac; in the guinea

pig, pulmonary; in the dog, hepatic. In man, any or all of these organs may show predominating reactions.

The sodium and potassium salts of carbonic, phosphoric, lactic, and sulphuric acids comprise a buffer system maintaining a normal biochemical balance. The fluids of our body are composed of solutions of weak acids and bases. When a strong acid is absorbed, it immediately reacts with one of these salts to form a weaker acid and a neutral salt. When a strong base is absorbed, one of the weaker acids unites with it to form a weaker base. By this process the reaction of the tissue fluids are controlled. Our biochemical reaction is measured in equivalence of  $pH$ . The tests are determined not on absolute quantities of the acid and base present, but upon the relative amounts of these two; 7.0  $pH$  is the strength of neutral distilled water and the human limits are from 7.0 to 7.80  $pH$ , but the ordinary state of the body balance runs from 7.30 to 7.50  $pH$ . When the  $pH$  rises above 7.50 we speak of the condition as being alkalosis, and reactions below 7.30 are called acidosis, which is merely a relative acid state, for the cell life could not live if the fluids became neutral, less acid.

The color of the nasal membrane covering the septum is of diagnostic value for when it is pale, the sodium and chloride elements are deficient and the body is in need of sodium chloride, calcium chloride, and dilute hydrochloric acid. If the membrane is red, potassium, calcium, and the iodides are deficient. If this membrane is dry, the sodium content is in excess of its normal balance with the potassium. If the blood pressure is high, the balance is restored by the reduction of the sodium intake, but if the pressure is normal or low, the balance may be corrected by increasing the intake of potassium. Thus we see that the sodium and potassium regulate the fluid balance and behavior of the tissues. Calcium and iodine are antagonists. Calcium is given to build up tissue, and the iodides to break down cell structures.

There is a disturbance of the autonomic balance whenever the membrane shifts from its neutral color. The patient with a red septum is of the sympathetic type, while the patient with a pale septum is of the parasympathetic variety, each exhibiting characteristics of that portion of the nervous system being over-stimulated. Tincture of iodine is indicated in the sympathetic group, while dilute hydrochloric acid is of value in the parasympathetic type. In the former the defensive reaction is inflammatory, whereas in the latter, degeneration of the tissue is common.

Allergic factors may be classified into the three following divisions: an inherited sensitive autonomic nervous system; a disturbed biochemical

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balance; and triggers, that is, contact with allergens.

The nasal membrane is derived from the endodermic layer of the fetus, and is the most sensitive and responsive tissue of the organism. The mucous membrane of the sinuses is less sensitive and responsive, but richer in lymphatics, which ultimately drain into the bronchial lymph nodes. The chest reflects the lymphatic activity of the sinuses. The nasal sites are those areas within the nose and sinuses which are sensitive and responsible for the beginning of the reflex. These established nasal sites are the upper and back part of the septum, the ethmoid region, the hyperesthetic areas on the tuberculum, and the anterior tips of the middle and inferior turbinates, points of contact between the septum and the outer wall of the nose, all of the sinuses, and the region of the sphenopalatine ganglion. A reflex path from the nose to the lungs is recognized, and a stimulation of it will produce spasms of the bronchial tree or an increased amount of the bronchial secretion. The most commonly encountered reflexes are derived from nasal polyps, contact made by deflected septums, especially those involving the sensitive spots on the septum. The hook-up is through the nasal ganglion with pressure being the trigger.

The picture of migraine is presented by paroxysmal attacks of headache preceded by sensory irritations, especially ocular, followed by nausea and vomiting. Three factors enter into the etiology: gastro-intestinal auto-intoxication; cortical disease; and allergic manifestations. The onset is gradual, usually before or at puberty. Irregularities in menstruation, worries, eye strain, and gastro-intestinal disturbances, may act as triggers. An increase of intracranial pressure may be felt first in the temporal parietal or occipital region, and it may be limited to one-half of the head. Sensory central symptoms are tingling and numbness; motor symptoms are: drooping of an upper eyelid; diplopia; diminution of vision; weakness of a limb; motor apraxia; pallor; sweating; and dilatation of the pupil.

The allergic type of vasomotor rhinitis may result from three groups of allergens; first, seasonal allergens, such as trees and flowers in the spring, and weeds, grasses and flowers from late summer to the first frost; second, inhalant allergens, such as face powder, house dust, flour, silks, dandruff, feathers and furs; and third, food allergens, such as eggs, butter milk and shell fish.

The initial x-ray films of a suspected case may show a cloudiness in one or more of the sinuses similar to that of the purulent type, but a second film made after the administration of a therapeutic

dose of adrenalin will eliminate the cloudiness, if the condition is allergic.

The medical treatment of vasomotor rhinitis is based on the re-establishment of the biochemical balance, sodium salts of the iodides and mixtures of calcium and phosphorus being important. The internal administration of ephedrine and a barbitol derivative is more efficacious than the local use of ephredine. At one time the intranasal radiation of ultraviolet was thought to be specific, but today is only used in selected cases. Bernheimer and Cutler reported that where radiation had been carried out on hyperesthetic rhinitis cases, fifty per cent were relieved one year later.

Alcohol injections of one to two c.c. of a forty to sixty per cent solution with procaine hydrochloride into the head of the lower turbinate and septum opposite it, were advised by Leichsenring in 1931. He claims good results in eighty per cent of the cases, and advises that the injections be made yearly. The spring form is more amenable to treatment than the autumnal type. Vail supports Leichsenring's contentions and criticises injection of the alcohol into the sphenopalatine ganglion for the relief of the allergic manifestations in the nose. Many of the commercial nasal drops contain ephredine, which is habit forming, and today we are seeing victims, who are never happy unless their membranes are under the influence of this Chinese drug.

The gastro-intestinal form of allergy may be caused from a hypersensitiveness to any food, the most common offenders being farm products, such as eggs, butter and milk; meats, such as chicken, other fowls, beef, veal and pork; sea foods, such as oysters, clams and shrimps; vegetables, nuts, leafy vegetables and starchy vegetables, as potatoes and wheat; and drugs, such as quinine, iodides, and arsenic. These unite with the protein of the blood to produce an allergent product.

Eczema and angioneurotic edema are frequently allergic manifestations. The three most common factors in eczema are milk, feathers, and occupational contact allergens. Angioneurotic edema is the manifestation of allergy in a person with an unstable nervous condition. Frequently these patients are women who show definite allergic reaction to common allergens. There are allergic manifestations in the ears affecting the mucous membranes of the eustachian tubes. These cases are most frequent in females prior to the menopause, although many of the recurring mild middle ears in young children are allergic. For the latter I have found that the elimination of sugar from their diet, and the administration of calcium, thyroid and parathyroid substances is of value. The inflation of the menopause renders only pass-



ing relief, and demands the administration of whole ovarian extract or one of the stimulating substances, such as Theelin or Antuitrin S. The internal ear is capable of allergic reactions and when this occurs a Ménière syndrome is produced. The free use of calcium is of advantage in stopping the attack.

If an increased alkalinity occurs as the result of the treatment of an acute infectious process, the biochemistry becomes favorable for an allergic reaction. The presence of an allergic state is not a contraindication to surgery, but on the other hand, any necessary intranasal surgery should be carried out, such as submucous resections of obstructive noses, or simple drainage of purulent discharge from a sinus. The reabsorption of sinus discharge often serves as an allergen. Radical pansinus operations are of value in the hands of the experienced, but should not be undertaken as a last resort.

Asthma is a neurosis causing a spasm of the bronchial muscles with hyperemia and turgescence of the mucosa of the smaller bronchial tubes, and is characterized by a peculiar exudate of mucin. There are three types of asthma, cardiac, renal, and bronchial or spasmodic.

The allergic patient readily becomes sensitive to the bacteria of acute or chronic infections, especially those of the sinuses, whereas, infection of the gums or tonsils may be tolerated. In order to study this sensitization, a culture should be grown from some of the sinus discharge upon an agar media. This excludes the possibility of any other protein entering into the test. A vaccine is made by simply washing with normal saline and sterilizing by heat. A marked reaction to a minute inoculation of this vaccine is proof of a sensitiveness to the reabsorption of the nasal discharge. The importance of this knowledge is that the sensitive patients may hope for relief through surgery, whereas, those not sensitive can only hope that the removal of some pressure will be of value. A hyper-irritable condition of the bronchial vagus, which has been aggravated by sensitization to certain specific proteins may be precipitated into an attack of asthma by either central or reflex stimulations, the cause of the stimulus being a diseased process in other organs, such as the nasal mucous membranes, sinuses, ear lung tissue, stomach and intestinal tract, gallbladder, genitalia, bladder and impacted third molar.

Osler defined hay fever and asthma as "a reaction of an anaphylactic nature in sensitized persons, in others possibly a reflex neurosis, characterized by a swelling of the nasal or respiratory mucous membrane, increased secretion, and in asthma, spasm of the bronchial muscle with dyspnea, chiefly

expiratory. There are no essential differences between hay fever and asthma; in one, nasal portion of the respiratory tract is affected, in the other, bronchial. Many times both."

Mullin has offered the following classifications: first, those due to sensitization to pollen, food and other proteins; second, those due to infection in the paranasal sinuses; and third, those due to reflex stimulation. It should be understood that in any individual case a combination of these causes may be responsible. Infections of the tonsils or pyorrhea are less likely to cause asthma than infections in the ethmoid or maxillary sinuses.

Tobey considers allergy the manifestation of a faulty protein metabolism with an excess of carbohydrates in the diet. Toxemia alters the asthmatic. A nasal disease, such as ethmoiditis, may culminate an allergic attack.

Weille, in an extensive study at the Massachusetts Eye and Ear Infirmary, followed several hundred cases of asthma and found the pathology within the nose to be as follows:

	Intrinsic	Extrinsic	Reflex
Cases .....	32	6	1
Polypoid .....	70%	50%	
Purulent and Polypoid	49%	50%	

Intrinsic cysts constituted nine per cent; thickened sinus membrane, ten per cent; polyps, forty per cent; marked fibronia, nine per cent; and cystic degeneration, ten per cent; many overlapped. A study of the sinuses involved produced the following statistics:

Sinus	Single	Bilateral
Maxillary .....	7	32
Ethmoid .....	2	26
Frontal .....	3	17
Sphenoid .....	0	15

Weille's conclusions were that 50 per cent of the asthmatic patients received long relief from sensible sinus surgery and that 75 per cent of the nasal symptoms were cured. If the asthma was extrinsic, the surgery failed to cure in the presence of the extrinsic factor.

#### TREATMENT

Morphine and its derivatives should be avoided by these patients, because the administration is dangerous. The first step is the complete testing by a competent allergist, which should include foods, inhalants and vaccines of the ordinary respiratory type. After the testing has been completed, the patient is advised to avoid or eliminate all products that can be taken care of in this manner. If, however, the patient is sensitive to certain products, which cannot be avoided, such as wind-borne pollens, an antigen composed of these clin-

ically important pollens should be administered. The clinical importance varies according to the different parts of the country, for in the extreme southern states, pollenization lasts nine months. The diet should include a sufficient amount of the foods whose ash is acid. The addition of dilute hydrochloric or nitrohydrochloric acid to the protein meals will aid in maintaining a favorable pH balance. A patient who is hyper-alkaline reacts allergically more violently than one whose pH is low.

Desensitization should be accomplished by neutralizing the fixed antibodies by repeated administration of small doses of the antigen over a long period of time.

Immunization: an excess of the circulating antibodies is acquired by spaced injections of graduated doses of the antigen. This has been of great value in the sinus type, where each acute cold precipitates an allergic attack. Removal of focal infections is important, for these patients readily become sensitive to the offending organism present in the focus of infection, especially in the maxillary and ethmoidal sinuses. The allergist who treats bronchial asthma without considering the possibility that the nose and the sinuses may be diseased, or the rhinologist who does not consider the possible presence of allergy, will both meet with failure.

Surgery may be divided into the following three classifications:

1. Plastic—As a submucous resection, when a deflected septum serves as an obstruction to the enlargement of the turbinates.
2. Intranasal—Antrotomies with tube drainage; ethmoidectomy, sphenoidectomy and rarely intranasal drainage of the frontal sinuses.
3. Radical—When the surgeon is satisfied in his mind that the sinus pathology is serving as a trigger for the allergic attacks, and if he has failed to gain permanent relief with intranasal surgery, he is justified in advising complete removal of the allergic sinus membrane. The results obtained will depend upon whether the patient is sensitive to the organisms in this membrane, and the competency of the surgeon to do a complete operation.

A temporary or permanent change of environment and recognition and elimination of extrinsic factors so far as possible, should be carried out before sinus surgery is advised, but surgery should not ordinarily be advised as a last resort.

#### CONCLUSIONS

The present study indicates that patients having polyps in the sinuses and nose, and patients having purulent cystic degeneration of sinus mucous membrane are the most favorable patients for

operation, so far as asthma is concerned, but the latter condition cannot be diagnosed preoperatively. Purulent sinusitis is less favorable than sinuses showing polypi. Patients having extrinsic asthma receive no benefit to their asthma from sinus surgery, nor do patients having slightly or moderately thickened sinus linings. However, "the worse the sinus disease, the greater the benefit to the asthma," is not necessarily true. Patients who have had drastic sinus surgery without benefit to their asthma are usually no better by "doing over" the operation, such efforts merely serving to discredit nasal surgery. Indications for sinus operation in asthmatic patients include:

1. Sinus disease demanding surgical treatment on its own merits.
2. Recurrent head colds precipitating asthmatic attacks; the aim of surgery is to lessen the number of such colds.
3. Attempting to interrupt the vicious cycle in the very severe case of asthma by measures which will give even temporary relief.
4. Cases in which removal of polypi or sinus irrigation yields temporary benefit.

The sinuses most often affected are the ethmoids, sphenoids, and antra, rarely the frontals. These operations are not always successful because the patient is not sensitized to his own sinus organisms, or because the operative work is not thorough enough. These cases are rare, but brilliant results follow relief of the sinus infection by operation.

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#### ISOLATED NON-REDUCIBLE FRACTURE OF THE MIDDLE THIRD OF THE RADIUS

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Fractures involving the middle one-third of the radius have always been very difficult to reduce and maintain in reduction. The majority of open reductions of the forearm are for this type of fracture. Many explanations have been advanced involving the pull of the pronator teres muscle which is inserted in this area. It is the purpose of this short discussion to explain the rôle played by the



fascial insertion of the pronator teres in preventing reduction rather than the traction of the muscle itself.

Isolated fracture of the middle one-third of the radius occurs in approximately five fractures out of each hundred involving the radius. It is produced by either direct or indirect violence. Displacement is usually slight, with only moderate over-riding. When there is over-riding in the transverse type of fracture it has been my experience that these fractures cannot be reduced properly except by open reduction. If the ulna is broken near the same level, the whole mechanism is changed.

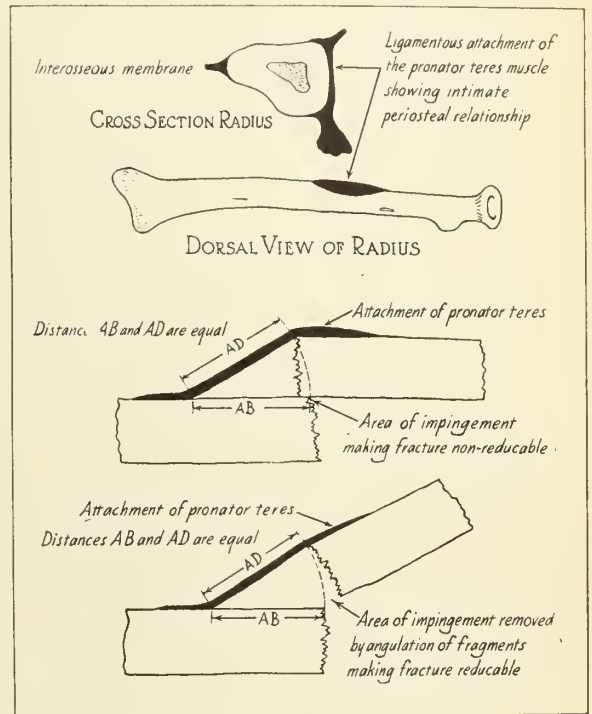
#### ANATOMY

The middle one-third of the radius is covered on its lateral surface by a heavy investing tendinous fascia consisting of the insertion of the pronator teres muscle. (See diagram.) This fascia is intimately attached to the periosteum of the radius in this area. It is composed of white non-elastic fibrous tissue. Owing to the twisting nature of the insertion of the pronator teres muscle and the fact that it passes laterally over the lateral surface of the radius, this fascia is rather thick in its insertion. The insertion of the fascial portion of the teres muscle is very much like that of the pectoralis major muscle, except that it is wider. The interosseous membrane is also attached to the medial border of the radius in this area. Flexor digitorum sublimis, flexor pollicis longus and abductor pollicis longus muscles also originate from the middle one-third of the radius.

#### MECHANISM

With a heavy fascia investment intimately connected with the periosteum over this area of the radius it can be seen that if the broken fragments slip off and over-ride, it will be impossible to reduce them when the long axes of the fragments are parallel. Note in the diagram that the distance AB equals AD, and as the fascia is non-elastic the area of impingement where the fascia has been stripped off will remain as long as the longitudinal axes of the fragments are parallel. It is also impossible to bring the ends into position by direct pressure because of the area of impingement of the two opposing lateral surfaces. With the fragments angulated about thirty-five degrees laterally, traction will result in reduction of the over-riding fragments, as the area of impingement of the two fragments is separated by rotation with the fascia of the pronator teres acting as the diameter of the circle of rotation. This is illustrated in the diagram. Following this procedure the angulation can be corrected and the radius restored

to its correct alignment. Thus the fracture is properly reduced. With both bones of the forearm broken this procedure can be more or less satisfactorily followed. The necessary angulation for reduction of the radius can usually be obtained. However, with only the radius broken the splinting effect of the ulna and the interosseous fascia completely prevents the necessary angula-



tion of the radius for reduction. It is this type of fracture that cannot be reduced without open reduction, due to the non-elastic fascia of the teres muscle and the splinting effect of the interosseous fascia and attached ulna.

#### TREATMENT

Open reduction is usually not difficult. Incision is made on the lateral border of the radius over the line of fracture down through the pronator teres fascia, where it curves over and around the lateral border of the radius to its insertion. It is then necessary to cut and strip away a portion of this fascia at which time the ends will drop together with slight traction on the radial side of the hand. The two ends may then be fixed with small silver wire which rarely causes any complicating tissue reaction. I feel that silver wire is superior to Kangaroo tendon or heavy chromic catgut, because the fragments have a tendency to slip, due to any slight motion of the hand or thumb, some of the muscles of which originate in this area. The forearm and hand, including the thumb

and all fingers, should be completely splinted with lateral plaster of Paris splints. The fracture should be placed in semi-pronation supination.

#### CONCLUSIONS

1. The ulna, the fascial insertion of the pronator teres muscle, and the interosseous membrane, splint the middle one-third of the radius.
2. These fascia membranes prevent reduction in isolated fractures of the radius.
3. Open reduction is not difficult, and is the treatment of choice.

### CLASSIFICATION OF THE ANEMIAS\*

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#### INTRODUCTION

Recent research has brought new light on the formation of hemoglobin and the red cells in the blood. In order to build hemoglobin and red cells, the body must have material (bricks), substances stimulating hemoglobin formation (bricklayers), and also a normally functioning hematopoietic system (the factory).

We may schematize hemoglobin and red cell formation in the following table:

Bricks	Bricklayers	The Factory
Protein	Copper	The bone marrow
Iron	Anti-anemia factor (in liver and stomach)	
	Vitamins	
	Thyroid hormone	
	Ultraviolet rays	
	Gastric acid	

Anemia may result from a lack of building material (protein or iron), from a lack of stimulating factors (copper, anti-anemia substance found in liver, etc.), from anatomic or physiologic changes in the blood-forming organs, or from a combination of these causes. Hemoglobin is a protein containing in its molecule one atom of iron. Protein and iron are therefore necessary in the formation of hemoglobin. Hemoglobin production and red cell formation require the presence of catalysts. These are copper, the anti-anemia factor found in liver, kidney or stomach tissue, and efficient in the treatment of pernicious anemia, sunlight or ultraviolet rays, vitamins, hormones, and gastric acid.

Copper stimulates the formation of red cells and hemoglobin. The anti-anemia factor, found in liver and specific in the treatment of pernicious

anemia, is instrumental in the building of red cells. This factor is believed to be indispensable in the development of the erythrocytic stroma. Copper, ultraviolet rays, thyroxin, Vitamin B<sub>2</sub>, and Vitamin C, aid in the conversion of megaloblasts to normoblasts. The anti-anemia factor of liver aids in the conversion of normoblasts to erythrocytes. Sunlight and ultraviolet rays help to maintain gastric acidity at its normal level. They also serve in the process of releasing for hemoglobin formation iron stored in the liver. Gastric acid aids in keeping iron salts in solution. In neutral or alkaline medium iron salts are liable to precipitate. Precipitated salts are not absorbed and are unavailable for hemoglobin formation.

The bone marrow (factory) must function properly in order to supply the necessary quantity of hemoglobin and red cells. The formation of cells and hemoglobin may be hindered by reason of changes in the bone marrow due; first, to chronic or acute infectious diseases; second, to metabolic diseases, such as diabetes or nephritis; third, to cardiac diseases; fourth, to vitamin deficiencies; fifth, to infestations with organisms higher than bacteria, such as amebae and intestinal parasites; sixth, to chemical poisons, such as lead compounds; seventh, to radiant energy, such as x-ray or radium; and eighth, to replacement of bone marrow by osseous tissue or tumor tissue.

#### CLASSIFICATION OF ANEMIAS

The newer classifications of the anemias take into account the more recent knowledge of hemoglobin and red cell formation. They destroy the old idea that anemias can be easily divided into primary anemias and secondary anemias. The classification we propose is based on the cause, and therefore gives a clue as to the specific treatment to be followed. It is a classification on the basis of therapeutics, and shows the anemias divided in the following manner:

1. Deficiency anemias
2. Myelogenic anemias
3. Erythroclastic anemias

These three types with their main divisions and subdivisions are given below:

#### I. DEFICIENCY ANEMIAS

At the present state of knowledge seven different types of deficiency anemias are recognized. Of clinical importance are five types: (1) anemia due to deficiency in the anti-anemia factor found in liver, kidney and stomach tissue; (2) anemia relative to iron deficiency; (3) anemia due to Vitamin B<sub>2</sub> deficiency; (4) anemia due to Vitamin C deficiency; (5) anemia due to deficiency in thyroid hormone. Of clinical unimportance because of

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their rarity are the two types: (1) anemia due to protein deficiency; (2) anemia due to copper deficiency.

The details of the classification of the deficiency anemias are given below:

A. Anemias related to the anti-anemia factor found in liver and specific in the treatment of pernicious anemia

1. Anemia due to absence in the diet of the anti-anemia factor.

This type is called *primary or exogenous macrocytic hyperchromic anemia*. Examples are: pernicious anemia; sprue; pernicious anemia of pregnancy; and the anemia of pellagra.

Pernicious anemia is the most common form of macrocytic hyperchromic anemia. Since the anti-anemia factor is necessary in the production of red cells, we find a shortage of these red cells in this type. To compensate for the small number of red cells, those present in the blood stream are large cells (macrocytic, ten to twelve microns) and rich in pigment (hyperchromic). The anemia is called exogenous, since it is caused by the failure to provide a proper intake of the anti-anemia factor in food material coming from the outside.

The anti-anemia factor consists of an intrinsic principle found in stomach tissue (Castle) and an extrinsic principle derived from the food intake. The extrinsic principle is believed by some investigators to be Vitamin B<sub>12</sub>, or the anti-pellagra vitamin. Other investigators doubt the identity of the extrinsic principle with Vitamin B<sub>12</sub>. The intrinsic principle produced in the stomach wall combines with the extrinsic food principle to produce the anti-anemia factor, an excess of which is stored in the liver. Liver extract is believed to contain a combination of the intrinsic and the extrinsic principle.

There are two types of anemia, depending upon the absence of one of the principles in the anti-anemia factor found in liver. Type 1 is due to the absence of the intrinsic principle found in the stomach tissue. An example of this type is pernicious anemia. Type 2 is due to the absence of the extrinsic principle found in food, and which was erroneously thought to be Vitamin B<sub>12</sub>. Some cases of sprue constitute an example of this type.

2. Anemia due to defective production or faulty assimilation of the anti-anemia or anemia-preventing factor.

This type is known as *secondary or endogenous hyperchromic anemia*. Examples are: sprue; anemia due to pregnancy; anemia due to multiple anastomoses; anemia due to gastric carcinoma; anemia due to bothriocephalus latus infestation; and pernicious anemia of pregnancy (increased demand or relative insufficiency).

B. Anemias related to iron

This type is called *microcytic hypochromic anemia*. The cells are small (five microns or less) and poorly pigmented, due to a deficiency in hemoglobin. Hypochromic anemia may or may not be accompanied by achlorhydria.

1. Anemia due to insufficiency of iron in the food intake.

This type is called *primary or exogenous microcytic hypochromic anemia*. Examples are: chlorosis; anemia of premature infants; and milk anemia.

2. Anemia due to loss of iron

This type is called *secondary or endogenous microcytic hypochromic anemia*. There are two types of this particular form. Type 1 is anemia due to loss of iron through hemorrhage due to menorrhagia, peptic ulcer, pulmonary hemorrhage, scurvy, trauma, etc. Type 2 includes the anemias due to loss of iron through failure of intestinal absorption. Examples are: sprue; chronic diarrhea; celiac disease; small intestinal stenosis; gastric hypo-acidity or anacidity as in fevers, infections, metabolic diseases, and gastric disturbances; and high protein diet neutralizing the free acid of the stomach. Anemias due to lack of vitamins may, among other things, be the result of loss of iron.

Beriberi, pellagra, scurvy, rickets, celiac disease, and acrodynia are the result of vitamin deficiencies. Hypo-acidity or anacidity accompanying avitaminoses, as well as constipation or diarrhea and other gastro-intestinal upsets, aid in producing anemia through malabsorption.

3. Anemia due to faulty assimilation of iron

This type is also a *secondary or endogenous microcytic hypochromic anemia*. Anemia due to loss of digestive fluids belongs to this class which is subdivided into the anemia due to loss of bile (bile fistula), and that due to loss of pancreatic secretion (pancreatic or duodenal fistula).

C. Anemia related to copper deficiency

Iron cannot be used to build hemoglobin unless copper is present as a catalytic agent.

Deficiency in copper therefore tends to poor assimilation of iron.

Milk anemia occurs in infants and children, in experimental animals and in patients subsisting largely on milk and milk products. Milk and cream form the basis of therapeutic diets in gastric or duodenal ulcer, in idiopathic epilepsy and in fevers. Milk is poor in iron, in copper and in the anti-anemia factor efficient in the treatment of pernicious anemia (macrocytic hyperchromic anemia.)

D. Anemia related to protein deficiency

1. Anemia due to low protein intake, as in famine, hunger or war edema.
2. Anemia related to faulty assimilation of protein, as in nephrosis.

E. Anemia related to Vitamin B<sub>2</sub> deficiency.

This anemia is a specific anemia relieved only when Vitamin B<sub>2</sub> (brewer's yeast) is administered, provided all other anti-anemia factors are included in the diet, or administered as medication.

F. Anemia related to Vitamin C deficiency.

This anemia is a specific anemia relieved only when Vitamin C is administered, provided all other anti-anemia factors are included in the diet, or administered as medication.

G. Anemia related to thyroid deficiency.

This anemia is a specific type relieved only by the administration of thyroid substance, provided all other anti-anemia factors are included in the diet or administered as medication.

#### FACTORS IN THE DIAGNOSIS OF ANEMIA

In the diagnosis of any type of anemia we must take into consideration, first, the quantity of hemoglobin in the blood; second, the number of red cells; third, the size of the individual red cell; and fourth, the amount of pigment in the individual cell.

From the standpoint of size we may divide erythrocytes into normocytes, microcytes, and macrocytes. From the standpoint of pigment content, we may regard erythrocytes as normochromes, hypochromes, and hyperchromes.

We may classify anemias on the basis of the size and pigment content of the red cells into six different types:

1. Normocytic normochromic anemia
2. Normocytic hypochromic anemia
3. Microcytic hypochromic anemia
4. Macrocytic normochromic anemia
5. Macrocytic hypochromic anemia
6. Macrocytic hyperchromic anemia

In the anemia caused by acute hemorrhage, there may be a reduction in the number of cells with those remaining normal in size and hemoglobin content (normocytic normochromic anemia.) If the acute hemorrhage is sufficient to produce an iron deficiency, we have a hypochromic normocytic anemia, and eventually a hypochromic microcytic anemia.

#### II. MYELOGENIC ANEMIAS

A. Anemia due to degenerative processes in bone marrow

1. Agranulocytic anemia
2. Primary aplastic anemia
3. Secondary aplastic anemia
  - a. Radiations: x-ray, radium, thorium
  - b. Organic compounds: nitrobenzene, trinitrotoluene, arsphenamine, etc.
  - c. Salts of heavy metals; lead, mercury, etc.

B. Anemia due to mechanical replacement of bone marrow

1. Osteosclerosis
  - a. Osteosclerotic anemia
  - b. Marble bone disease (Albers-Schönberg disease)
2. Leukemia
3. Hodgkin's disease
4. Multiple myeloma
5. Metastatic growths in bone marrow
6. Lipoid deposits in bone marrow (Gaucher's disease, Niemann-Pick disease, Schüller-Christian disease)

C. Anemia due to metabolic derangements inducing physiologic or organic changes in bone marrow

1. Cachectic states
2. Diabetes, nephritis, diseases of liver and of spleen
3. Thyroid disease
4. Infections
5. Avitaminoses

#### III. ERYTHROCLASTIC ANEMIAS

A. Anemia caused by disintegration of defective erythrocytes

1. Hemolytic icterus, congenital or acquired
2. Sickle cell anemia

B. Anemia caused by disintegration of erythrocytes through toxic agents

1. Infections
  - a. Bacterial toxins: hemolytic streptococcus, etc.
  - b. Protozoal toxins: malaria, syphilis, kala-azar
  - c. Acute febrile anemia of unknown origin



2. Infestations: toxins of intestinal parasites
3. Chemical poisons: snake venom, mushroom poison, bile salts, phenylhydrazine, potassium chlorate
4. Serum hemolysins: incompatible transfusion, paroxysmal hemoglobinemia or hemoglobinuria
5. Toxins produced by burns
6. Toxins developed as a result of impaired metabolism: extreme cachexia, cancer, leukemia, nephritis, etc.

Anemia does not always lend itself to straight-laced classification. Many times more than one cause may operate to produce a given blood picture. As an illustration we may take dysentery. The anemia in this disease is due; first, to loss of blood from the intestinal tract; second, to deficient nutrition; third, to low gastric acidity; fourth, to malabsorption; and fifth, to the infection itself.

**EDITOR'S NOTE:** An article on The Treatment of the Anemias, also by Dr. Levine, will be published in an early issue of the JOURNAL.

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### THE MODERN CONCEPTION AND MANAGEMENT OF ACNE VULGARIS

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Acne vulgaris or ordinary acne is a chronic inflammatory disease of the sebaceous glands, characterized by the formation of comedones, papules, nodules, pustules or a combination of these. It is a disease whose incidence in the two sexes is about equal, being mostly associated with the evolution of puberty.

The following factors are considered as having some influence on the production of acne:

- I. Heredity.
- II. Race.
- III. Bacteria and other organisms.
- IV. Metabolic disturbances.
- V. Endocrine disturbances.
- VI. Focal infection.

I. Heredity: Stokes and King<sup>1</sup> believe that heredity plays an important etiologic rôle in acne vulgaris, as a history of "pimples" or an oily skin in other members of the family is often obtained from those presenting themselves for treatment. These authors are of the opinion that those subject to this skin affection inherit the tendency to an allergic reaction to an invading organism (bacterial allergy). They have observed that following the puncture of an acne lesion there was a

wheel-like formation about the lesion as well as wheel-like induration of a number of lesions adjacent to it, which were not punctured. They consider this reaction due to a local allergic response to released toxin.

II. Race. Way<sup>2</sup> called attention to the fact that sebaceous secretion is greater in the black than in the white races, and greater among the southern Europeans than among those in the northern part of the continent. This is partly due to climatic conditions, but in the main may be considered as a familial and racial characteristic. It is also known that dark complexioned persons usually have larger and more actively secreting sebaceous glands than blondes. Acne is very likely to develop in those who present an oily skin and patulous follicles. The latter soon became clogged with inspissated sebaceous material. These lesions are known as comedones or blackheads. They block up the follicles and prevent the egress of any sebaceous material emitted by the sebaceous glands. These plugs easily become infected by the organisms normally present on the skin, and an inflammatory process is the result. Many of these lesions suppurate, producing pustules which if deep enough cause sufficient injury to the skin to leave pits and scars. Most of the scarring, however, is brought about by the patient, due to the irresistible desire to pick and squeeze the lesions.

III. Bacteria and other organisms: Sabouraud described a micro-bacillus as the causative factor. Unna discovered this organism in the comedones. Its pathogenicity, however, has not been generally accepted. More recent workers favor the assumption that acne arises on a skin which provides the proper conditions for bacterial invasion. It is usually the seborrheic skin which offers a favorable environment for bacterial growth, thus setting up inflammatory lesions. Ayres and Anderson<sup>3</sup> are convinced that the organism *Demodex folliculorum* is the cause of acne. They have found these organisms in the acne pustule and in the comedo. According to Beerman and Stokes<sup>4</sup> the *Demodex* organism may favor the entrance of bacteria into sebaceous glands and hair follicles and thus set up the inflammatory process.

IV. Metabolic disturbance: Tauber<sup>5</sup> in a recent paper has again called our attention to the fact that there is no hyperglycemia present in acne vulgaris; yet empirically carbohydrates are always restricted, because it seems to be of benefit in reducing the number of new papules. Experience has shown us that an excess of carbohydrates in the diet not only increases the quantity of sebaceous material and thus makes the face more oily, but that it also has a constipating effect. This may lead

to the formation of fermentation products in the intestine that in turn may lead to reflex irritation and an inflammation of the sebaceous glands. Iodides and bromides have an irritating action on the sebaceous glands; as a result it is unwise for an acne patient to use medication or foods in which either of these elements might be present. (Some breads contain bromides and some table salts are iodized.)

V. Endocrine disturbance. At puberty, the pilosebaceous apparatuses are hyperactive and as a result there is usually a pouring out of much sebaceous material, that is also perhaps of a thicker consistency. Comedones may thus easily develop, and the ground work is laid for the formation of acne lesions. Acne is frequently associated with menstrual disorders. This type of acne becomes slightly improved between periods. It is sometimes referred to as menstrual acne. For the past year I have paid particular attention to the female patients with acne who have had an associated dysmenorrhea. Along with other local measures, I have given these patients weekly intramuscular injections of theelin for about six or eight weeks, and have found a decided improvement in the results in these recalcitrant cases. Lewis\* is also of the opinion that theelin is of considerable value in acne associated with menstrual disturbances.

VI. Focal Infection. Focal infections have a marked effect upon the condition of the skin. Sutton<sup>6</sup> states that he has better results in cases of acne after the infected tonsils, teeth, etc., discovered in these patients, have received proper attention.

#### PATHOLOGY

Comedones are the primary lesions of acne. All other manifestations are secondary processes. The comedo, acting as a foreign body induces a local reaction. The plugged follicle is then surrounded by an inflammatory zone of varying intensity; the papule. The papule may become infected and pus develop; the pustule. The inflammatory process and pus formation may extend to the deeper cutis; the cutaneous or subcutaneous abscess.<sup>7</sup> In addition, foreign body giant cells may be present with the histologic appearance of granulation tissue.

#### THERAPY

The early case of acne with comparatively few lesions responds as a rule to local topical remedies. Those of longer duration with a profuse eruption respond best to x-ray therapy. Twelve to fourteen weekly x-ray exposures of one-fourth skin units each (about 80 unfiltered roentgen) is the routine practice. Some of the more recalcitrant cases require several additional treatments. Re-

currence of the infection occurs in about ten to fifteen per cent of the cases. This may arise from some systemic disturbance which has not received proper attention. Usually the relapse is mild, but if the patient's resistance is poor the acne may assume a picture worse than it was originally. In such cases, especially where response to x-ray therapy is slow, I usually apply the ultraviolet rays (cold quartz), and have found this method to be quite satisfactory. When treating with the x-rays it is important to remember that in case of a relapse another course should not be given for at least one year. If given much sooner there is a possibility of producing radiodermatitis.

X-ray therapy offers the most rapid method of producing a permanent cure, and at the same time does away with the time consuming applications of topical remedies. The x-rays inactivate the sebaceous glands thereby diminishing the amount of sebaceous secretion upon the skin. This makes the skin less susceptible to comedo formation and bacterial infection. Besides this important form of local treatment, it is essential that constitutional treatment also be employed.

There are apparently some erroneous beliefs regarding the rôle played by the x-ray in the production of scars. In this connection, Niles' work<sup>8</sup> is of extreme interest. He treated forty consecutive unselected cases of acne vulgaris at the skin clinic of the New York Postgraduate Hospital. The right side of the face received one-quarter of an erythema dose of unfiltered x-ray each week while the left side of the face remained untreated. The average number of exposures was twelve and one-half. Not only the treated side of the face cleared up but also the untreated side. Niles found similar degrees of scarring on both sides of the face in thirty-two patients, more pronounced scarring in five on the untreated side, and in three patients on the treated area. A certain amount of scarring will appear in treated as well as untreated patients, but much less scarring occurs in those treated with the x-ray providing the treatment is commenced early in the disease. MacKee<sup>9</sup> in his experiences of thirty years, has never seen scarring that may definitely be attributed to the x-rays *per se*. Some individuals scar, no matter how mild their condition may be, while on the other hand there are patients with severe forms of acne who scar very little. This apparently is an individual peculiarity.

The opinion of laymen and some physicians that x-ray treatment induces hypertrichosis is not in accordance with the experience of MacKee. Niles could not detect any difference in the amount of hair growth between the treated and untreated

\* Personal communication.



side. Hypertrichosis may follow x-ray treatment, but this is only apparently so, for when the acne clears up, blemishes previously unnoticed become conspicuous.

The percentage of cures with the x-ray is much higher than with any other form of therapy. The percentage of recurrences is also fewer than with other forms of treatment. The statistics of MacKee show that sixty per cent are cured within four months and that thirty-five per cent require more than four months. There are only five per cent in which a failure resulted. Ten per cent had a single recurrence. Those patients who required more than four months of x-ray treatment received from one to two extra exposures. Those patients who showed occasional lesions after x-ray therapy required topical treatment to complete the cure. A relapse following x-ray therapy may often be prevented by the subsequent use of some mild antiseptic and astringent lotion. This should be ordered at the first sign of a recurrent oiliness of the skin.

For the mild cases of acne it is possible to aid the condition a great deal by the use of lotio alba, or the more concentrated preparation recommended by Abramowitz,<sup>10</sup> with the usual instructions as to diet, hygiene, etc. Cold creams or greasy preparations of any kind are forbidden, for they aggravate the condition by supplying oil to a part which is already too oily. These preparations also block up the glandular openings, thus making possible the production of more comedones. The patient is instructed to rub the lotion into the skin before retiring, after the face has been washed with soap and warm water. It is allowed to remain on overnight and washed off the following morning. This type of therapy produces an astringent action in the skin, with some scaliness.

MacKenna<sup>11</sup> is of the opinion that the irritating effect of cold cream is intensified by the successive application of vanishing cream. He also states that the fats block the sebaceous and sweat glands, and interfere with the perspiration causing the temperature to rise and leading to a continued dilation of the superficial blood capillaries and eventually to an acne rosacea.

#### CONCLUSIONS

Roentgen therapy is at present the most important and most effective agent in the treatment of acne vulgaris. It is necessary that the proper selection of cases be made. Fractional treatment over a period of three or four months is to be preferred as it is safer than a more intensive method. Along with weekly x-ray treatments, the patient should be given the proper directions as to

diet, hygiene, treatment of constipation and care of the scalp. Foci of infection should be removed, and rational endocrine therapy should also be instituted, if indicated.

816 Equitable Bldg.

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## THE SALIENT FEATURES IN THE TREATMENT OF CARDIAC FAILURE

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The treatment of congestive heart failure is essentially the same, whether it is due to rheumatic heart disease, arteriosclerotic heart disease, or luetic heart disease.

The reduction of the cardiac load is the first objective in the treatment of congestive heart failure; the second is to improve the cardiac efficiency by the use of drugs; and the third to manage intelligently each individual case. This third part is very often forgotten, and I should like to emphasize it prior to taking up rest and the use of drugs.

An optimistic attitude is very important in the care of cardiac patients. The diagnosis of heart failure signifies death to patients, and they appreciate an optimistic attitude on the part of the physician; whether or not it is always justified. It is very important for us to keep our patients as happy as possible, even if death is staring them in the face. We should guide their activities. The ordinary practitioner is perhaps negligent in not giving specific directions. These orders should be written, so that the patient is sure of what he can and cannot do.

\* Presented before the Eighty-third Annual Session, Iowa State Medical Society, Des Moines, May 9, 10, 11, 1934.

I have formulated a table of some "avoids;" in the first place, avoidance of haste. These patients always take time, and they want your time. If they are paying for it, they deserve to have your time; if they are not paying for it, and you do not have the time, they should be referred to someone who does have the time. Avoid oversteering the examination. This applies chiefly to the blood pressure. We do have to follow the blood pressure and various other indications of the cardiac failure, but we should avoid oversteering blood pressure, because the popular impression of hypertension is one of fear—and taking it once or twice a day is not necessary except immediately after coronary occlusion. Excessive nursing is also a point which should be avoided, especially early in the treatment of the case. These people need absolute rest. Unless the weather is hot and the patient needs to be bathed or rubbed twice a day or rolled frequently, it is not necessary for the nurse to overdo this phase of the treatment. The next item is visitors. In country practice it is very important to exclude visitors, especially those who have had cases of heart disease in their family, because they can always relate some of the most terrifying things to these patients. Lastly, under management of the case, try to keep the confidence of the patient. This is very difficult to do, but it is possible if we make a special effort toward it.

Under the reduction of the cardiac load, the first essential is absolute bed rest. Sometimes this is difficult to carry out, because the patient's bed is not comfortable, and he would be more comfortable sitting in a chair. Absolute bed rest means that the patient does not go upstairs from a downstairs room to use the bathroom, or outdoors to sit on the porch. If the bed cannot be fixed properly, then the chair should be used and equipped with an arm rest so that the head and shoulders are elevated. Many times even doctors do not realize the importance of having the head and shoulders supported. The patient will complain of paroxysmal dyspnea, especially of the nocturnal variety. If you ask them if they have been using more than one pillow, many times they will say, "No, one pillow has been sufficient." Yet he is awakened and forced to sit up due to dyspnea. These attacks can often be prevented by having the patient's head and shoulders elevated. If the bed cannot be fixed with blocks under the head of it, then an old comfort rolled up under the mattress, or pillows or even a chair inverted, can be used to raise the head and shoulders. Light, warm bed clothes are also of importance. We go into the home many times and find several heavy comforts over the patient to keep him warm, whereas one

light blanket would do the same thing, and in addition, be more comfortable. The atmosphere of the room is important. We find so often in hospital rooms that the dresser is placed at the foot of the bed, and the patient is able to look at his dyspneic, cyanotic face. His alarm at the appearance of his face often constitutes a definite drawback to the treatment. The lighting effects are also of significance. Many rooms have the light in the center of the room, and, in the evening or night when it is turned on, the patient is forced to face this light. Fresh air and proper humidity are of extreme import. The window should be open, even in cold weather, to afford a change of air, and if it is necessary to have considerable heat in the room, a steam kettle should be kept going. A little salt water in a teakettle, placed on an electric plate, allows the patient much more comfort, especially if he is having difficulty in breathing.

The next point is how to produce rest which is so essential. No one should be afraid of using morphine in large doses in this type of case. I once heard Dr. R. B. Preble say that he had never seen a patient with cardiac failure become a dope fiend, but if he did it was justifiable because the patient was in such a severe condition that only morphine would help keep him comfortable and alive. I believe this is very nearly true, if not absolutely true, and we should give sufficient morphine so that the patient has ten to twelve hours of rest every night at the beginning of the treatment. I do not think that at first morphine can be replaced by any of the barbiturate compounds, such as luminal, amytal, and the like. Sometimes these patients suffer definite distress because their chests are full of fluid. If so, a careful paracentesis should be done to relieve this chest discomfort. Venesection is important, especially in patients who are markedly dyspneic and cyanotic. This venesection should be done rapidly and should be sufficient in amount; that is about 500 c.c. The situation is altered, of course, if anemia is present.

To improve the cardiac efficiency by drugs. I have placed digitalis first only because that is the customary drug. I do not believe that digitalis is of nearly as great value in congestive heart failure as has been emphasized in the past. In fact, it has been my experience recently to find that several of these patients do not tolerate digitalis well. This is especially true in the arteriosclerotic group. I recently had brought to my attention the fact that after giving digitalis, the patients become more dyspneic, whereas when digitalis was discontinued, and sedatives or theophyllin given, they were much more comfortable. Even with auricular fibrillation



I find that digitalis is not tremendously beneficial. When I do use digitalis, I do not give large doses. If I use the tincture I prescribe fifteen minims three to four times a day, but I prefer the powdered leaf in grain and one-half doses at about the same intervals. Theophyllin is one of the newer drugs, and it is only within the last five years that its use has become universal. I feel that theophyllin is of great benefit in congestive failure and it is much more effective when given with hot water. It increases the coronary circulation and in this way improves the cardiac efficiency. I believe that all of these patients should have it.

Many congestive heart failure cases will dehydrate on bed rest alone. Some of them, if they have the high carbohydrate diet, which I will speak of shortly, will dehydrate. Others, if given theophyllin for a day or two, will dehydrate even more rapidly. Especially in the group of elderly patients with cardiac failure, we find that theophyllin is a distinct addition. Personally, I feel that the main benefit of theophyllin is manifested when given over a long period of time. Even after these patients are up and about, it keeps them from having repeated attacks of congestive heart failure. In the patients who do not respond well to theophyllin, bed rest and diet, ammonium nitrate will often turn the tide so that they become dehydrated. If they do not become dehydrated after they have had ammonium nitrate for two or three days, salyrgan can be administered, intravenously. It is given starting with a small dose and gradually increasing it. I usually start with  $\frac{1}{2}$  c.c. and follow it the next day with one c.c., and on the third day, if necessary, two c.c. At one time salyrgan was thought to be harmful to patients. I think it has been fairly definitely proved that if the patient reacts fairly well to  $\frac{1}{2}$  c.c., one can use it with impunity for a considerable length of time.

Strophanthin is a drug which has been neglected a great deal in the past few years. Some of the older members of the profession have used strophanthin clinically and feel that it has been of great benefit. There is an old pill, calomel, squill, and strophanthin, which has been used considerably by members of the profession up in our territory, and they feel that it is a very beneficial combination. I have used strophanthin, 1/100 grain, intravenously or intramuscularly, on several occasions when I thought there was acute heart failure present. It has distinctly benefited these patients in whom I wanted immediate support to the heart. I have used Strophanthus for continuous administration for some patients who did not tolerate digitalis well, and in whom theophyllin alone did not seem beneficial. Pharmacologically Strophanthus is thought not to be well absorbed. Clinically, at

least, I have felt it has been valuable in a number of patients. The powdered extract, 1/60 to 1/80 grain, has been used.

In cases of congestive heart failure due to luetic heart disease, bismuth is a distinct addition. Given intramuscularly, it acts as a diuretic as well as having a specific action. In two instances where congestive heart failure was due to luetic heart disease, aortic insufficiency, I have had unusually good results not only in dehydrating the patient but in the progressive course following congestive failure.

Previously you have had talks, and I know there have been papers in the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY on the value of diet in the treatment of heart disease in general, as well as in the treatment of heart failure. Its importance cannot be overemphasized, because the value of a high glucose diet has certainly proved to be beneficial clinically. The diet should be balanced and easily digested; protein, 60 to 80 grams, and carbohydrates, 120 to 200 grams. Some patients find that they cannot tolerate the high carbohydrate diet because of the excessive sweetness. In those patients one can change to dextrimaltose. The Karo Company has recently issued their product in a powdered form which is very palatable and does not have the sweet taste present in the syrup. Milk sugar is also of great benefit in increasing the carbohydrate intake.

In the past it has been a common course for doctors to restrict the fluid intake in most of their cases of congestive heart failure. I think that has been distinctly harmful to many patients. The lower limit of the fluid intake should be about 1500 c.c. Occasionally, by lowering this intake to 1000 c.c. there will be a definite benefit, but, as a rule, I think the lower limit should be 1500 c.c.

It is most important to watch how the patient's course is progressing in regard to edema. If it is not possible to weigh the patient by the use of a bedside scale, the intake and output should be measured. This can be done by having a fruit jar at the bedside; every time a patient takes a drink, he should pour an equal amount of water in the fruit jar. A fruit jar can also be used for the urinary output. The bowel elimination should be carefully controlled. Many of these patients do not tolerate enemas well. Personally, I am favorably inclined to the small enema of hot water, or, if there is distention, of milk and molasses; but, by using some of the bile salts combinations or even a mild saline laxative, bowel elimination can be controlled readily. In some patients, the high glucose diet will satisfactorily regulate the bowel elimination.

I should like to mention oxygen therapy, which is of distinct value in cardiac failure, especially in patients who do not respond well to the other

forms of treatment. This can be done by taking a common, commercial reduction valve, and putting it on a commercial tank. The valve will cost you \$18.00 and the tank of oxygen can be bought for \$5.00. The hole through which the oxygen comes from the valve, should be what the mechanics call a No. 60 drill hole. This will give five liters of oxygen at one-half pound of pressure. It can be carried through a fruit jar of water by means of tubes to the patient, and the nasal catheter should be inserted through the nose until you can see the tip of it posterior to the soft palate. It should then be drawn back so that it does not irritate the back of the throat. This should be given continuously until the patient is well on the road to recovery.

#### SUMMARY

The salient features in the treatment of cardiac failure are:

1. Management of the individual case in respect to the mental attitude, placing and general care.
2. Reduction of the cardiac load.
3. The improvement of the cardiac efficiency by the use of drugs.

### CASE REPORT

#### ANOMALY OF FINGER AND TOE NAILS, ONYCHAUXIS

WILLIAM RANKIN, M.D., Keokuk

The following case of anomalous formation of the finger and toe nails is considered worthy to be reported because of its comparative rarity, since a search of the literature reveals very few cases of similar condition,<sup>8, 9, 10</sup> and only one which approximates it closely.<sup>1</sup>

The patient, a lad six years of age, was referred to me because the other school children made fun of his hands. On appearance he seemed subnormal mentally, stood with mouth open and gave the appearance of being a mouth breather. The head showed some evidence of squareness; the eyes seemed normal, the pupils responding to light and accommodation. He did not answer questions well. The throat showed hypertrophy of tonsils and the appearance of the cervical glands indicated pent up infection. No enlargement of the thyroid gland was apparent. The skin and hair seemed dry. The chest was normal as to pathology, but not well formed; the heart, abdomen, and kidneys were normal.

The extremities showed all nails with thickened matrices. Epithelium was piled on epithelium

with the nails in typical claw formation. The fingers were worse than the toes, but all had claw formation.

*History:* The child was born at term, normal delivery, the second of five children. The nails were well formed, but not hypertrophied. The child had six teeth at birth. The other four children have normal nails. This child has a husky voice always beginning in a whisper. The mother was only fifteen years of age when this child, the second, was born. She is a large healthy woman of subnormal mentality. One sister has a goiter, but there is no history of insanity, epilepsy or malformed nails on her side of the family. The father



Taken November, 1932, before nails were removed.

is of the nervous type, cannot stand noise, takes patent medicine for his nerves. He is also subnormal, and very little history could be obtained from him.

*Treatment:* In November, 1932, we took this boy to the hospital, removed all his nails, and cauterized the matrices with actual cautery. The Visiting Nurses Association did the follow up on this case and kept the nails trimmed down. One light treatment with ten per cent silver nitrate was all I ever saw of him. His nails at present are the same thick horny substance, but the pointed claws have not returned.

I consider his I. Q. very low. His skin and hair with his general appearance would indicate a hypothyroid condition. He does not learn well in school, and will repeat first grade work this year. A diagnosis of onychauxis, from a disturbance of the thyroid gland, was made.

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## THE FINLEY HOSPITAL CLINICOPATHOLOGIC CONFERENCE

### POLYP OF THE ILEUM WITH DOUBLE INTUSSUSCEPTION

C. C. LYTLE, M.D., and  
L. H. FRITZ, M.D., Dubuque

Acute intussusception of the intestine usually occurs during the first two years of life. It is rare in adults and when encountered is commonly found to be caused by an inflammatory condition or by benign or malignant neoplasms. The following case in a boy sixteen years of age is of interest first, because the exciting cause was a pedunculated polyp of the ileum, and second, because a double invagination of the ileum was found at operation.

#### CASE REPORT

*Chief complaint:* The patient, a boy sixteen years of age, was admitted to the Finley Hospital, October 9, 1933, with a complaint of "severe abdominal pain, vomiting and constipation."

*Family history:* Irrelevant.

*Past history:* The patient had had numerous attacks of constipation and vomiting.

*Present illness:* While on the way home from school four days ago he suddenly had an attack of severe abdominal pain. The next morning he vomited but felt well enough to attend school. He also felt well on the following day. On the next day (Sunday) he went to his aunt's for a visit, and that night he vomited persistently and from the aunt's description the vomitus may have been of a fecal character. He was first seen the next morning (four days after the original attack) when he was in a slight shock. An indefinite boggy mass was felt to the right of the umbilicus. His bowels had not moved for two days, although rectal tenesmus was pronounced. No blood was seen in the small amount of mucus and fecal material that had been passed. A tentative diagnosis of intestinal obstruction was made and the patient was sent to the hospital.

*Physical examination:* The patient was a well developed boy in severe shock. His temperature was 101 degrees; his pulse was 110, and the respirations were 24 per minute. The general examination was negative. The mass noted above was

still present. The abdomen was soft except for spasm on moderate pressure over the mass. The white blood count was 16,000 with 76 per cent polymorphonuclear leukocytes. The urine was negative except for a strong acetone test. The possibility that the obstruction was due to acute appendicitis with localized peritonitis was considered likely. Preparatory to operation, measures to combat the shock were taken and simple enemas given. The latter showed bright blood in the scant fecal material recovered. After the enema the mass disappeared on palpation but could be felt on rectal examination. A diagnosis of intussusception was then made.

*Operative note:* There was 100 c.c. of blood tinged fluid in the abdomen. The intussusception was found about three feet back from the ileocecal valve. Apparently eight inches of the gut formed



Fig. 1. Photograph of the surgical specimen. The outer intussusciens has been opened showing the infarcted double intussuscepta and the polyp at the lower end.

the invagination. Attempts to reduce the intussusception failed and fourteen inches of the ileum were resected and an anastomosis done. Ileostomy was also performed in order to relieve the distention above the anastomosis. The patient left the operating table in profound shock. He failed rapidly and died in eighteen hours.

*Description of specimen:* "The specimen is a resected portion of the ileum 20 cm. in length. The upper portion appears normal and is invaginated into the lower portion which is dark red and four times its normal diameter. On opening the lumen is filled by fluid and recently clotted blood and the appearance is that of a blood sausage. At the lower end of the intussusceptum a round polyp is seen protruding from the lumen. On further

dissection the latter is found to be pedunculated and there is a double invagination of the bowel (Figs. 1 and 2). All five layers of the intestine are congested and infiltrated with blood. The mesenteric veins are thrombosed."

*Anatomic diagnosis:* Pedunculated polyp of the ileum; double invagination of the ileum with infarction.

#### COMMENT

Intussusception may be acute or chronic. Three-fourths of the acute cases occur before two years of age and there is a marked preponderance of males. In adults the condition is usually chronic, although the symptoms preceding the intussuscep-

etiologic factors. In children abnormal mobility of the cecum, tumors or enlarged lymph nodes and congenital anomalies are recognized as causative factors although frequently no anatomic cause for the invagination can be found. While the intussusception may occur in any part of the intestine the more frequent types in the order of their frequency are ileocecal, enteric, ileocolic, and colic. The ileocecal type makes up three-fourths of the cases. Double invaginations, as in our case, are rare.

*Diagnosis:* The onset of intussusception is generally characterized by a sudden, paroxysmal, crampy pain often causing the patient to double up. Between attacks the patient may be comfortable and lie quietly. Signs of shock are usually pronounced. Vomiting is almost always present early in the attacks and later is likely to follow the taking of food. Constipation is present and may be absolute. Often the history indicates that the bowel movements consisted of a little fecal material with clear mucus or mucus mixed with bright blood. On physical examination a boggy mass, often sausage-shaped, can be demonstrated in some part of the abdomen depending upon the site of the intussusception. Rarely the mass may be felt on rectal examination or it may even protrude through the rectum. Early the white blood count is slightly elevated and then tends to rise gradually. The symptoms of collapse and shock are out of proportion to such a short illness from most other causes and especially those which might confuse the diagnosis.

*Treatment:* The treatment of intussusception is essentially surgical. In the majority of cases, the treatment should be early to be successful. In adults who as a general rule have chronic intussusception, the danger of gangrene of the invaginated portion of the bowel is not as great as in the acute cases. Therefore more time may be devoted to determine the exact nature of the condition.\* The acute cases require emergency surgical procedures. If the main diagnostic features are kept clearly in mind a diagnosis of intussusception regardless of its etiology should be made early. Exploratory laparotomy is then demanded. When done early the intussusception may be reduced, especially in children. If infarction of the invaginated portion of the intestine has occurred, resection of the bowel will be required. In adults, even if reduction is possible, it is essential for the surgeon to determine the etiology of the intussusception. Often a polyp or some other neoplasm will demand resection of the intestine. If this is neglected it is likely that the intussusception will recur.

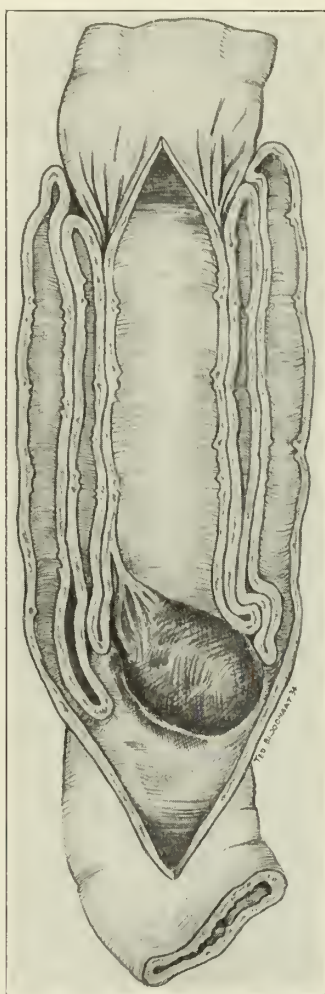


Fig. 2. A diagrammatic drawing of the specimen showing the double invagination.

tion may be mild as in the case reported. Benign or malignant tumors are often found to be etiologic factors in adult intussusceptions. Polyps, adenomas, fibromas, lipomas, hemangiomas, carcinomas and sarcomas have all been reported. Inflammatory changes or congenital anomalies such as a Meckel's diverticulum are other well known

\* Hancock, J. C.: Fibroma of the cecum. Jour. Iowa State Med. Soc., xxiv:628 (December) 1934.



STATE DEPARTMENT OF HEALTH

*Walter Looming*

MORTALITY FROM MEASLES IN IOWA  
DATA RELATIVE TO THIRTY-FIVE DEATHS  
IN 1934

According to death certificates filed with the Division of Vital Statistics of the State Department of Health, seventy deaths due to measles and complications occurred in Iowa during 1934. In order to obtain further information pertaining to these deaths, a measles mortality record form or questionnaire was forwarded to physicians signing the death certificates. The following paragraphs are based on data contained in thirty-five questionnaires returned by physicians. The department appreciates the cooperation and interest of physicians in supplying the desired information and in returning the completed mortality record forms.

I. Age and sex distribution.

The following table indicates the age and sex of thirty-five persons who died of measles in 1934 and concerning whom further data have been made available:

Age Group	Male	Female	Total
Under 6 months.....	1	3	4
6 mo. to 1 year.....	2	0	2
1 to 4 years.....	4	8	12
5 to 9 years.....	3	10	13
10 to 19 years.....	2	0	2
20 to 29 years.....	2	0	2
TOTAL .....	14	21	35

It will be noted that 18, or 51 per cent of the deaths, concerned those under five and that 31, or 87 per cent of the fatalities, occurred in children under ten years of age.

II. Distribution of deaths by months.

Nine of the 35 deaths occurred in April, nine in June, seven in May, two deaths each in February, March, July and November, and one death each in August and December of 1934.

III. Factors relating to mortality from measles.

A. Health Status Prior to Last Illness.

Eighteen, or 51 per cent of the thirty-five deaths occurred in individuals who were stated to be in good health before the attack of measles. The health of six patients was fair preceding illness with measles and that of seven others, poor. Four of the records contained no statement regarding general physical condition. Three of those whose deaths were attributed to measles had heart disease preceding the attack. Malnutrition, prematurity, nephritis, cretinism, jaundice

and "poor stock" were mentioned once each as conditions tending to lower bodily resistance. "Lack of proper care and food" was mentioned as a contributory factor in two fatal cases. A nine year old boy went swimming immediately after the eruption of measles had subsided. He developed bronchopneumonia, death occurring in May, 1934. An infant, four months of age, on "bottle feeding since one month old," died of bronchopneumonia complicating measles.

B. Other Infectious Diseases Prior to Fatal Illness.

Whooping cough preceded the attack of measles in five of the fatal cases and followed measles in a sixth instance. In one fatality, a girl, three years of age, had suffered an attack of diphtheria and scarlet fever in 1933, death occurring in April, 1934. An attack of the common cold preceded measles in one case. In 25, or about 70 per cent of the thirty-five fatal cases, no mention is made of the occurrence of other communicable diseases prior to the fatal attack of measles. The possibility of contact with tuberculous infection was mentioned on only one of the records.

C. Economic Status in Homes Concerned.

In five of the thirty-five homes in which a death from measles occurred in 1934, the economic condition was above average. Average economic status prevailed in eleven homes. Seven families were on "border line relief" and eight families on relief. Four of the records contained no information.

D. Order of Occurrence of Measles in Homes.

In eighteen instances, the fatality concerned the first or primary case in the home. School was mentioned as the probable source of spread of infection in seven of the primary cases. In nine additional cases, the source of infection was undetermined. In fourteen cases, fatality represented a later or secondary case in the home. Nine records mentioned that infection was acquired from another member of the family. Infection was traced to school in three instances and outside the home in one other case. In thirty of the records containing the desired information, there were seventy-two adults and eighty-seven children in families in which

fatalities occurred. In several homes, the death from measles concerned an only child.

#### E. Application of Preventive Measures.

In none of the thirty-five fatal cases had immune blood, convalescent serum or placental extract been administered as a prophylactic measure. Parental whole blood was given in one case to combat septicemia and two blood transfusions to another patient with a complicating streptococcic endocarditis.

#### IV. Nature of Complications.

Bronchopneumonia was the chief complication leading to a fatal outcome, being mentioned in twenty of the thirty-five records. Lobar pneumonia occurred once. Otitis media was next in importance to bronchopneumonia, causing meningitis in three instances, "brain abscess" in a fourth, and septicemia in a fifth case. Septic endocarditis caused two deaths. One fatality resulted from a rheumatic heart and another from toxemia. No statement was made on the remaining records.

#### SUMMARY

Information is presented based on data supplied by physicians relative to thirty-five deaths from measles which occurred in Iowa in 1934. Data covering a larger series of fatal cases should be of value in revealing further the various factors related to mortality and in outlining preventive measures.

Carl F. Jordan, M.D., Epidemiologist.

#### MEASLES CONVALESCENT SERUM

As announced in the March number of the JOURNAL, page 150, the State Department of Health has available for distribution to physicians a limited amount of measles convalescent serum. A second shipment of this serum has been received through the courtesy of Sidney O. Levinson and associates, of the Samuel Deutsch Serum Center, Michael Reese Hospital, Chicago. Dr. Levinson and his co-workers have, during the past two months, made three visits to Waterloo and one visit to Iowa Falls to obtain measles and scarlet fever convalescent serum. Arrangements are being made for similar work to be carried out in Dubuque and Des Moines. Physicians are urged to acquaint parents with the value of serum treatment in the prevention or modification of measles. The department will forward serum promptly and without charge, to physicians requesting it. Five c.c. vials of serum are available for children under three, and 7.5 c.c. vials for those over three years of age.

#### MAY DAY CHILD HEALTH PROGRAM

To the Medical Practitioners of Iowa:

This department has been working together with the physicians to encourage parents to secure for all of their children the direct benefits which immunization against diphtheria offers.

For the past two years the organization and conduct of all preventive programs have been effected according to the plan outlined jointly by the Committee on Child Health and Protection of the Iowa State Medical Society and this department. The cost of medical services, the preventive agent employed, the allocation of physicians to districts and the methods of making preventive treatments available to all children have been determined by county medical societies.

Immunization against diphtheria has been chosen for the May Day-Child Health Day Project for 1935. Although much has been accomplished in Iowa in regard to the prevention of deaths from diphtheria, even now too many children die from this disease. An overwhelming majority of parents fail to give the family doctor the opportunity to protect every child during the second half year of life. More than four out of five children under six years of age living in rural areas in Iowa have not received protective treatments against diphtheria.

The practicing physician can and should call the attention of his patients to the need for and the value of protecting children of the pre-school age against this disease. He can tell these parents that he is prepared at all times, or if he prefers, at some special time to give preventive treatments to their children. Best of all, he can make it a routine practice to give protective treatments against diphtheria to all babies during the second half of their first year of life.

Organized medicine has always favored diphtheria immunization. Illness and deaths from diphtheria can be reduced to the vanishing point, only if all practitioners do the things suggested in this letter. Your cooperation in this desirable health movement is earnestly solicited.

Cordially yours,

Walter L. Bierring, M.D.,  
Commissioner of Public Health.

#### PREVALENCE OF DISEASE

	Feb. '35	Jan. '35	Feb. '34	Most Cases Reported From
Diphtheria .....	33	46	32	Black Hawk, Polk
Scarlet Fever .....	372	296	299	Hancock, Black Hawk
Typhoid Fever .....	6	8	5	(For State)
Smallpox .....	12	6	22	Black Hawk
Measles .....	5640	4580	481	Dubuque, Boone, Linn
Whooping Cough ..	47	55	116	Dubuque, Wright
Cerebrospinal Meningitis .....	10	4	4	Polk
Chickenpox .....	196	301	337	Woodbury, Story
Mumps .....	776	602	228	Dubuque, Linn
Poliomyelitis .....	3	0	2	(For State)
Tuberculosis .....	32	42	28	(For State)
Undulant Fever ..	5	14	5	Cerro Gordo
Syphilis .....	122	148	132	(For State)
Gonorrhea .....	154	172	145	(For State)



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ISSUED MONTHLY

RALPH R. SIMMONS, Editor.....Des Moines

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**LOYALTY TO YOUR STATE SOCIETY**

While individualism in the practice of medicine cannot and should not be destroyed, the collective efforts of physicians as secured through the state organization furnish the unifying force which marks progress in all medical efforts. Your State Medical Society is active in its various pursuits daily, weekly, and monthly throughout the year, but its climax is reached in the annual session where an accounting of the various officers, committees, and boards are given and where new plans are created for the coming year. The high standards of professional conduct must be safeguarded; a constant activity in furthering beneficial medical and sanitary laws must be maintained; scientific effort in the maintenance of public health and the prevention of disease must be fostered, and the scientific advancement of the individual physician must be the goal of all society endeavor. At this time when the public is aroused by lay organizations to a demand for socialized practice, every physician should be interested in the activities and plans of his state organization. Shall we sit idly by while the octopus of socialization in medicine insidiously but surely fastens its tentacles into our medical practice and submissively accept the rôle of a bureaucratic hireling or a salaried servant of lay organizers? If we are to manage our affairs, preserve our past traditions and control our own destinies, it must be accomplished by the unified efforts of our own profession. These, and hundreds of other problems should and will be discussed by this profession and definite plans of procedure developed. Every member should lend his wisdom, his constructive criticism, and his best efforts, to those whom he delegates to control and direct the affairs of our great profession. To do this effectively every physician requires this contact with his organization. He needs the scientific information and stimulation; he needs the fine fra-

ternity shared by those whose paths cross at this annual conference. Read elsewhere in this issue of the scientific program prepared for your instruction and make your plans now to be in attendance at Davenport for this inspiring 1935 annual session.

## THE CLINICAL LABORATORY AND LABORATORY FEES

**A Resolution**

At the last annual meeting of the Iowa State Medical Society the Committee on Child Health and Protection rendered a report favoring an appropriation which would "provide funds for free Wassermann testing." In discussing this report the opinion was expressed that the recommendation of this committee was antagonistic to the rights of those physicians devoting their attention to clinical pathology and operating private commercial laboratories. The Committee on Medical Economics of the Iowa State Medical Society invited Dr. Julius S. Weingart of Des Moines, Dr. F. P. McNamara of Dubuque, and Dr. F. H. Lamb of Davenport, to conduct an exhaustive study of this problem and furnish the Committee with their recommendations.

At a regular session of the Committee held on January 23, 1935, the following resolution was presented:

"Whereas, At the meeting of the House of Delegates of the Iowa State Medical Society in Des Moines, Iowa, May 9-11, 1934, discussion arose on the question of the re-establishment by the State Board of Health, through its laboratory at Iowa City, of a statewide free serologic and a continuance of other free laboratory service;

"And, whereas, This question was referred to the Committee of the State Medical Society on Medical Economics for making recommendations to the State Board of Health, and ultimately to the State Legislature;

"Be It Resolved by the following physicians, members of the Iowa State Medical Society, who are primarily interested in clinical laboratory work, that the following suggestions and representations be made to the Medical Economics Committee for its consideration in this matter:

"1. That an unlimited free statewide serologic and other free laboratory service as rendered in the past by the Iowa State Board of Health Laboratory constitutes a serious and unwarranted encroachment in the field of the local private and hospital laboratories, just as a free diagnostic or surgical service rendered by the University Hospital would be a serious encroachment in the field of clinical medicine. There is a place for a limited free clinical service and, likewise, a place for a limited free laboratory service; but the unlimited practice of medicine by the state

should not go on in the laboratory any more than in the hospital ward or operating room.

"2. We believe that in the past the free laboratory service has been abused; that in countless instances this service has proved to be free to the physician, but not so to the patient—a condition which it seems difficult to reconcile from any ethical standpoint with the real intent of a free service.

"3. We realize that the State Board of Health Laboratory has an important function in that part of the public health program which deals with the prevention and control of infectious and contagious disease. However, an indiscriminate free laboratory service alone does not and cannot accomplish this purpose. For example, in the case of syphilis, as is well known, the individual who acquires the disease remains serologically negative until from two to four weeks of a period in which he or she is actually in the most infectious stage. Moreover, when the Wassermann or Kahn test is reported positive the individual is still free to transmit the disease inasmuch as the degree of quarantine is largely a personal matter with the patient. There is but little actual curb on laxness in this respect, if the patient chooses to be lax. The same may be said of the bacteriologic service in the examination of slides for gonorrheal infection. In other words, the rendering of free laboratory examinations cannot, in practice at least, be considered synonymous with, or tantamount to, prevention and control. Obviously these are quarantine measures.

"4. While it is not our business to define the jurisdiction of the State Board of Health Laboratory, may we, for the present purpose, point to an important difference between public health measures and private or individual health matters. As is well known, public health measures have to do with control and regulation en masse of communicable disease as illustrated by the examination of public water, milk, and food supplies, the examination of those who dispense food and drink, and surveys for the detection of diphtheria bacilli, streptococci and meningococci carriers when the occasions arise.

"On the other hand, the desirable early diagnosis of the individual case of infectious disease cannot, in practice, be carried out with the greatest dispatch at a central state laboratory which may be from 100 to 200 miles distant. The following illustrations will emphasize this point. In the diagnosis of syphilis, it is the dark field examination made directly from the suspected lesion which gives the early confirmatory evidence of the disease, antedating serologic confirmation from two to three weeks; in typhoid, it is the blood culture, in meningitis, it is the immediate examination of spinal fluid; in diphtheria, it is the direct smear or culture, the report of which should be available in twelve to fifteen hours. When such early individual diagnoses are made or confirmed in these and other diseases, then the public health program should begin. And, where an effectual quarantine is established and enforced by the state health department, the measures for release from that quarantine are rightfully public health measures.

"5. Statewide free laboratory service has so encroached on the field of the private and hospital laboratories that the latter are unprofitable. Trained experienced physicians who could and would devote their entire time to this field, and who would constantly seek to enlarge their laboratory facilities are forced to retrench and divide their efforts in order to earn a living. Thus, there is no encouragement or incentive to the opening of new or additional private laboratories throughout the state which should prosper with a fair volume of work. In time, local laboratory facilities could become available, not only in the larger centers, but in some of the smaller communities, thus bringing the service closer to the physician and patient.

"6. We believe that if the proper committees of the state legislature were fully conversant with all phases of the problem of free laboratory service there would be no disposition to enlarge or extend these facilities, nor to revert to the former system. On the contrary, it might be considered a business proposition for the legislature to direct that the state laboratory become not only self-supporting but help to defray the cost to the state of the board of health. We find that a plan could be worked out along this line that would not interfere with the legitimate activities in the state health program and by relieving the state laboratory of the burden of a diagnostic service, give it more time for purely public health matters.

"7. By way of a constructive suggestion and in conformity with the policy of the State Medical Society in resisting the practice of medicine by the state, we recommend that the State Board of Health Laboratories discontinue the statewide free diagnostic service as it applies to work that should be paid for. In case it is felt that the State Laboratory facilities must be maintained even for that type of work, then establish a system of charging fees commensurate with average fees charged for similar tests. To provide for the patient who is really unable to pay and still not in the status of a ward of the state, the patient and physician should certify jointly to the patients limited financial ability and then the patient should be notified by mail from the State Laboratory that his test was made without charge. The laboratory records should be kept in such a way as to reveal instances of abuse of this free service.

"8. In conclusion, the foregoing representations have been made somewhat in detail for the reason that probably but little thought has been given to this phase of the laboratory situation in this state by the majority of the members of the Iowa State Medical Society. As pointed out previously, an indiscriminate free clinical service rendered by the University Hospital would not be tolerated, yet the principle involved in an unlimited free laboratory service is quite comparable. An indiscriminate free laboratory service is no more necessary from a public health standpoint than a free clinical service would be. This form of state medicine has, indeed, laid a heavy hand on clinical laboratory development and if not controlled will continue to do so.



"Modern medicine cannot progress without more and better local facilities for such immediate laboratory examinations as blood and throat cultures, dark fields, spinal fluids, frozen sections of tissue, and autopsies; but the local laboratory cannot render this desirable service in the face of an unlimited free state service, which has the effect of depriving the local clinical pathologist of a profitable volume of work."

The desirability of a fee schedule for procedures conducted by the clinical laboratories was brought out in the discussion of this resolution. While the thought was expressed that the fees for all laboratory work should be left largely to the local pathologist, the following schedule was offered and recommended "in order that there should not be too great a difference between the fees charged by the doctors in private practice and by the State Laboratories."

Tuberculosis cultures .....	\$ .50	
Sputum .....	1.00	
Smears .....	1.00	
Typhoid Widal .....	2.00	
Kahn .....	2.00	Both for \$4.00
Wassermann .....	3.00	
Spinal fluid .....	5.00	
Blood cultures .....	5.00	
Tissue .....	5.00 to 10.00	
Guinea pig inoculation.....	5.00	

#### VITEX VITAMIN D MILK

The antirachitic principle of Vitamin D has been recognized for several years, and its therapeutic application to the individual patient has become well established. More recently it has seemed desirable that this efficient prophylactic substance be provided for children en masse, and for obvious reasons the inclusion of this vitamin in cows' milk as supplied on the commercial market offered the most effective medium.

By fortifying cows' milk with adequate quantities of Vitamin D a widespread need throughout large sections of the United States for antirachitic prophylaxis appears assured. Recent researches indicate the superiority of the natural Vitamin D of cod liver oil for the fortification of milk to those artificial preparations produced by irradiation. By a process developed in the laboratories of, and controlled by, Columbia University it is now possible to separate the vitamins from the disagreeable non-nutritious portion of cod liver oil. Following this procedure the vitamin extractions are then emulsified in butter fat or cream and this lipid is then hermetically sealed and sterilized. This emulsion is known as Vitex.

Licensed dairies have introduced Vitex in milk before pasteurization. Each quart of such milk

has an added Vitamin D content of 400 U. S. P. units (150 Steenbock). Vitex pasteurized Vitamin D milk was the first Vitamin D milk to be accepted by the Committee on Foods of the American Medical Association, and at the present time is being produced and marketed in thirty-eight states, Canada, England and China.

A valuable discussion of the antirachitic value of various types of Vitamin D milk in clinical experience has been made by Lewis during the past year.\* He concludes that the medium of milk allows for better absorption or utilization of the antirachitic vitamin than other vehicles and explains why in his opinion Vitamin D milks, as a group, require fewer units of Vitamin D than cod liver oil or viosterol to prevent or cure infantile rickets. His results, while interesting, cannot be accepted as final since several years of clinical experience will be required to establish absolute values of this new prophylactic procedure in the prevention and treatment of rickets.

\* Lewis, J. M.: Clinical experience with Vitamin D milks. New York State Jour. Med., xxxiv:685-688 (August 1) 1934.

#### ANNALS OF MEDICAL HISTORY

In a recent issue of the *Annals of Medical History*, Dr. Packard, the editor, calls attention to the fact that carrying no advertising matter, this periodical has to depend entirely upon its subscribers for support. He concludes his announcement that "the *Annals* is faced with the unpleasant possibility that it may have to suspend publication." He further comments that, should such an eventuality come to pass "it will be many a long year before a publisher will be found of sufficient courage and disinterestedness to undertake a similar project."

Many of the readers of this journal are familiar with the history and origin of the *Annals of Medical History*, of the part Sir William Osler and others of his calibre played in founding it, and of the part its publishers, Paul B. Hoeber, Inc., have had in its worth and beauty. We are justly proud that such a publication should be produced in this country, since it is easily the most outstanding and distinguished publication of its nature available to the American profession. With its future in jeopardy, an appeal is being made by many friends of the publication to arouse the interest of the profession to the end that this publication may be continued.

The *Annals of Medical History* is unreservedly commended to the attention of the readers of the JOURNAL, and you are urged to express an active interest at this time by forwarding your subscription directly to the publishers at once. Let us respond to the appeal from this premier publication and assure its publishers by our interest that we wish its publication continued.

## Modern Weapons Aid Physicians In Fight On Tuberculosis

*The treatment of tuberculosis must in all cases be based on diagnosis. Only a doctor can decide whether treatment is necessary and how it should be carried out.\**

This is the underlying principle and aim for the 1935 educational campaign of the National Tuberculosis Association, sponsored in this state by the Iowa Tuberculosis Association, which is scheduled to begin April 1. The importance of early diagnosis will be urged in order that treatment can be started promptly and with more prospect of a cure, or at least of arresting the disease.

Our knowledge of treatment has made tremendous strides and it is timely to inform the public more fully of recent developments. To prevent misconceptions, facts should be presented on today's methods of treatment, such as collapse therapy, the importance of the sanatorium, and social rehabilitation of the tuberculous patient. This is the basis of the slogan, "Fight Tuberculosis with Modern Weapons."

Contributions of the laboratory and the surgeon have greatly improved a patient's chance of recovery. A purified tuberculin enables physicians to discover early tuberculosis with greater accuracy than ever before. X-ray technic and apparatus have been improved. The sanatorium has become a more important center for diagnosis and treatment. These steps will be explained as a means of removing the fear of tuberculosis held by some persons and which may keep them from consulting a physician if they suspect the presence of this disease.

An appreciation of scientific medicine is a major objective of health education and the modern treatment of tuberculosis inspires respect for scientific medicine. Fuller knowledge of the treatment of tuberculosis dispels much of the fear of the disease and prompts the person who may be worried about his health to consult his physician.

The poster being made available suggests that

\* This statement is being featured on the five pieces of literature that will be distributed in Iowa during the campaign.

### WHERE TO OBTAIN LEAFLETS

*Copies of campaign leaflets and other information may be obtained by writing to the Iowa Tuberculosis Association, 610 Flynn building, Des Moines, or from the local tuberculosis association or Christmas seal sale committee.*

medical science is a moving, living enterprise in step with the times. Attractive leaflets explain concisely and authoritatively the main aspects of the treatment of tuberculosis: general treatment, need and purpose of the sanatoria, collapse therapy, and economic and social rehabilitation. Tuberculosis through the ages has been surrounded by many deep-rooted fallacies. Much has been done to dispel these notions in the last fifty years and the knowledge gained of the disease has brought tuberculosis out of darkness. It is proposed in this campaign to enlighten the public to an even greater extent, and to urge the importance of obtaining scientific medical service.

Another important feature of the campaign will be the emphasis placed upon the proper care of patients after leaving the sanatorium. Tuberculosis may become active again, as the patient returns to an active life. A physician should be consulted frequently during this stage of the fight against tuberculosis and his directions should be followed closely.

With Iowa's annual death toll ranking with the four lowest states in the United States, it is apparent that progress in the further control of tuberculosis will be influenced largely by the recognition given by parents and people generally to the problem of effectively controlling the spread of infection. In many Iowa counties, this new knowledge will be disseminated by Christmas Seal sale organizations, with funds obtained in the 1934 Christmas Seal sale. Newspapers, radio stations, billboards and various organizations will share the task of placing this vital information before the public.

Physicians can help to further this aim by co-operating with the tuberculosis societies and the other participating agencies, and thus assure a wider acceptance of accurate and sound knowledge.



# SPEAKERS BUREAU ACTIVITIES

## POSTGRADUATE COURSES

The Speakers Bureau Committee has four postgraduate courses starting the week of April 1. The course at Council Bluffs will be concluded on April 15, but the work of postgraduate instruction will continue at Leon, Independence, Hampton, and Emmetsburg. Thirty-five men are enrolled in a clinic course on gastro-intestinal diseases at Leon, sixty men are enrolled in laboratory courses at Independence and Hampton, and a like number at Emmetsburg.

The course at Leon covers the following subjects:

1. Peptic Ulcer.
2. Diseases of the Stomach and Intestines.
3. Diseases of the Gallbladder and Liver.
4. Tumors of the Gastro-intestinal Tract.
5. Roentgenology of the Gastro-intestinal Tract.
6. Gastro-intestinal Phases of Systemic Diseases.
7. Abdominal Distress.

The clinicians are men chosen both from Iowa and outside the state.

The laboratory course consists of ten meetings at which the following subjects will be considered by the men named:

1. Hematology—F. H. Lamb, M.D., Davenport; A. C. Starry, M.D., Sioux City.
2. Immunology of the Blood—Julius S. Weingart, M.D., Des Moines.
3. Blood Chemistry—R. E. Gibson, M.D., Iowa City.
4. Tissue Examination and Metabolism—F. P. McNamara, M.D., Dubuque.
5. Bacteriology—M. E. Barnes, M.D., Iowa City.
6. Stool and Gastric Analysis—W. D. Paul, M.D., Iowa City.
7. Urinalysis—A. C. Starry, M.D., Sioux City.
8. Electrocardiography—B. F. Wolverton, M.D., Cedar Rapids; H. W. Rathe, M.D., Waverly; R. N. Larimer, M.D., Sioux City.
- 9 and 10. Practical Demonstration of X-ray Technic and Diagnosis of Films, C. L. Gillies, M.D., Iowa City.

The course at Independence will meet on Monday evenings, starting April 1, at the Gedney Hotel at six p. m. The Hampton course will meet on Thursdays, starting April 4, at the Coonley Hotel at six-thirty p. m. The Emmetsburg course will meet on Fridays, starting April 5, at the Kermooore Hotel at five p. m. The Clinic Course at Leon will be held on Mondays, starting April 1, in the hospital at Leon, the clinic being held from four to six p. m.; dinner at six p. m.; and formal talks following the dinner.

Anyone interested in these courses may still enroll, either by writing the Speakers Bureau Committee, or by going to the meetings and enrolling there.

## AVAILABLE PROGRAM MATERIAL

Philip Morris and Company, Limited, have a program of scientific interest dealing with the pharmacology of inflammation—the influence of hygroscopic agents on irritation from cigarette smoke, which they would like to furnish to any county medical societies desiring such a paper. Their program contains no advertising, and is composed of scientific papers only, but because it concerns something which is of vital interest to them, they are anxious to present it to medical groups. Arrangements may even be made by which they will provide a dinner for the physicians who signify their interest in such a program.

Any county medical society which desires further information concerning this program may write to the Speakers Bureau Committee, or to Philip Morris and Company, Limited, of New York.

## ANNUAL SESSION

The Speakers Bureau Committee cordially invites all of those attending the annual session at Davenport on May 8, 9 and 10, to visit its exhibit, where some idea of the scope of the activities of the committee may be gained. A map of the postgraduate courses presented in the state presents a record which would be hard to equal.

## RADIO BROADCASTS

Mondays, 8:00 p. m.—WSUI

Wednesdays, 4:00 p. m.—WOI

April 10—Defenses Against Disease, J. H. Kinnaman, M.D.

April 17—Tonsils and Adenoids, Ben Budge, M.D.

April 24—Rickets, J. F. Gerken, M.D.

May 1—The Mother in Mothers' Day, E. D. Plass, M.D.

May 8—The Hospital in the Community, R. E. Neff.

May 15—Medical Organization and What It Means, C. A. Boice, M.D.

The Speakers Bureau Committee will be very glad to receive comments on the radio programs, as well as suggestions for future programs. In the past, the strictly medical talks have brought the most requests for copies from the listeners, but it is the belief of the Speakers Bureau Committee that the general talks have a definite place in the schedule. Any suggestions will be gratefully received.

# WOMAN'S AUXILIARY NEWS

*Edited by the Press and Publicity Committee*

MRS. OLIVER J. FAY, *Chairman*, 405 Thirty-seventh Street, Des Moines

## FROM YOUR PRESIDENT

Dear Auxiliary Members:

The middle of April is not too soon to begin thinking of our trek to Davenport for the Sixth Annual Meeting of the Woman's Auxiliary to the Iowa State Medical Society. The renewal of friendships will mean much to us. The resulting inspiration and the joy of both old and new associations to make richer the retrospect of coming years, makes this opportunity one not to be neglected. Much as we regret the fact that Scott County does not have an auxiliary to help us in planning for the business program of our annual meeting, we are delighted to know that we are going to Davenport, and will be welcomed there by charming and interested doctors' wives.

Dr. Harkness has appointed Mrs. Paul A. White to have charge of the entertainment of auxiliary members and all other women guests attending the convention. The Blackhawk Hotel will be the auxiliary headquarters, and every effort is being put forth to make this our best annual meeting. Mrs. White will be a delightful hostess, and I am sure every auxiliary member attending the convention meetings will find food for thought in the program, and will enjoy every moment of her recreational time under Mrs. White's guidance.

We are most happy to tell you that Mrs. Samuel Clark Red of Houston, Texas, will be with us. Those of you who have attended national meetings are acquainted with Mrs. Red. As you probably know, the family tree of the Woman's Auxiliary to the American Medical Association springs from roots deep in the soil of Texas. The first auxiliary was the Dallas County Auxiliary, organized in 1917, and the following year the Woman's Auxiliary to the Texas State Medical Association was formed. Mrs. Red was president of this organization for two years. To her is given the credit of conceiving the idea of a National Auxiliary, and she set about selling the idea to doctors and doctors' wives over the entire United States. Mrs. Red with her ready smile and vivid personality traveled hundreds of miles visiting state after state, and at last set in motion enough enthusiasm, so that at the national meeting in St. Louis in 1922, the Na-

tional Auxiliary to the American Medical Association was founded, with Mrs. Red as its first president.

She is also the author of "The Medicine Man in Texas," a comprehensive study of the medical profession in Texas, from the expedition of Cabeza de Vaca down to the foundation of the state medical society. The royalties from this book are turned over to the Texas Auxiliary, and the money is used in a revolving fund to loan money to deserving medical students. We are most happy that out of her busy life Mrs. Red has found time to come to Iowa. You will want to see her and know her.

I will be looking for you May 8, 9, and 10, in Davenport.

## LAST MINUTE GOOD NEWS

As the JOURNAL goes to press, we have received the good news that our state meeting this year is to be honored by a visit from Mrs. Robert W. Tomlinson of Wilmington, Delaware, president of the Woman's Auxiliary to the American Medical Association. She has just returned from a meeting with the New York Auxiliary, which is planning the national meeting in Atlantic City this June. Our Canadian friends are joining with us in the largest medical meeting the world has known. Ours will be the joy of extending our hands and opening our hearts to our northern neighbors. Mrs. Tomlinson will acquaint us with the plans for the meeting, and set us on fire to attend.

Our distinguished visitor is a charming woman to meet, a competent and tactful presiding officer. She senses her responsibility to the group and to each individual in it. Those who know her best tell us that she has an intelligent vision of the true scope of auxiliary work; that she has firm convictions in regard to it, able to look at a question with cool consideration, but with courage to stand for these convictions. Unblinded by her enthusiasm, she can approach a question from all sides with that generosity and kindness of judgment which makes her quick to praise and slow to criticize the motives of others. It will be a rare privilege to meet her, and an inspiration to put forward our best efforts for the next year.

Gertrude H. Downing, President.



## SOCIETY PROCEEDINGS

### Black Hawk County

Three physicians from Mason City conducted a symposium on typhoid fever at the meeting of the Black Hawk County Medical Society held in Waterloo, Tuesday, March 19. Speakers were L. R. Woodward, M.D., H. W. Morgan, M.D., and C. E. Dakin, M.D.

### Calhoun County

The regular monthly meeting of the Calhoun County Medical Society was held at the courthouse in Rockwell City, on Thursday, March 21. The scientific program was presented by W. W. Bowen, M.D., of Fort Dodge, whose topic was Frequent Complications Following Surgery of the Biliary Tract. Several physicians from surrounding counties were present.

F. W. Hobart, M.D., Secretary.

### Cherokee County

C. H. Johnson, M.D., of Cherokee was the speaker of the evening when the Cherokee County Medical Society met in Cherokee, Monday, March 18. Dr. Johnson spoke on Acute Infections of the Abdomen.

### Dubuque County

Gordon F. Harkness, M.D., of Davenport, and Arthur W. Erskine, M.D., of Cedar Rapids, addressed members of the Dubuque County Medical Society, Tuesday, March 12. Dr. Harkness, president of the State Society, discussed The Medical Profession in Iowa; Its Problems and Its Future. Dr. Erskine, councilor for the seventh district, spoke on Legislation of Interest to Physicians.

### Floyd County

Members of the Floyd County Medical Society assembled for their regular monthly meeting in Charles City, Tuesday, March 26. O. H. Banton, M.D., of Charles City, presented a paper on Bronzing Associated with Exophthalmic Goiter. Case reports were given by Drs. H. W. Kruse of Rockford, H. G. MacLeod of Greene, A. F. Kober of Charles City, and J. B. Miner, Jr., of Charles City.

### Hancock-WinnebagO Annual Meeting

The first quarterly meeting of the Hancock-WinnebagO Medical Society was held at Forest City, Monday, March 4. Plans were made to promote the passage of the Basic Science Law now in the legislature. Dr. L. R. Woodward of Mason City was present and explained the working set-up of the federal medical relief aid in detail. Officers elected at the annual business session include: Dr. George F. Dolmage of Bufalo Center, president; Dr. W. F. Missman of Klemme, secretary; and Dr. A. J. Peterson of Forest

City, delegate. The second quarterly meeting of the society was scheduled for May at Britt.

W. F. Missman, M.D., Secretary.

### Harrison County

The Harrison County Medical Society held a meeting Tuesday, March 5, in Logan. Following the six-thirty dinner, S. M. Clark, M.D., of Woodbine, read a paper on Scarlet Fever, and H. N. Anderson, M.D., also of Woodbine, spoke on Infectious Diseases.

### Johnson County

At the regular meeting of the Johnson County Medical Society, held in Iowa City, Wednesday, March 6, Hale F. Shirley, M.D., reported a case of psychasthenia of the obsessive type in a girl thirteen years of age, discussion opened by H. W. Lovell, M.D.; and J. H. Wolfe, M.D., addressed the society on the subject of hip fractures, discussion opened by F. R. Peterson, M.D.

Horace M. Korn, M.D., Secretary.

### Lee County

Physicians and surgeons of Lee County held their regular quarterly meeting in Keokuk, Thursday afternoon and evening, March 28. W. J. Stewart, M.D., associate professor of orthopedic surgery of the University of Missouri, Columbia, explained the Abduction-Traction Treatment for Congenital Hip Dislocations; and G. J. Musgrove, M.D., of Mercy Hospital, Chicago, spoke on Radiopaque Visualization of Paranasal Sinuses. Dinner was served at six-thirty in the Graham Hospital, after which the following program was presented: The Iowa Emergency Relief Plan for Medical Care, T. C. Denny, M.D., of Des Moines; Medical Economics, Gordon F. Harkness, M.D., of Davenport; and The Leukemias, Nature, Types and Diagnosis, M. Pinson Neal, M.D., professor of pathology, University of Missouri, Columbia.

### Linn County

The next meeting of the Linn County Medical Society will be held in Cedar Rapids, Thursday, April 11, with L. W. Dean, M.D., of St. Louis, as guest speaker. Dr. Dean will speak on The Diagnosis and Treatment of Nasal Sinus Disease in Infants and Young Children.

On Thursday, May 2, George V. I. Brown, M.D., of Milwaukee, Wisconsin, will address the society on Plastic Surgery.

### O'Brien County Annual Meeting

Officers elected at the annual meeting of the O'Brien County Medical Society held in Primghar, Monday, March 27, are: Dr. J. A. Wagner of Primghar, president; Dr. Kermit Myers of Sheldon, vice president;

Dr. H. J. Brackney of Sheldon, secretary and treasurer; Dr. W. R. Brock of Sheldon, delegate; and Dr. Ernest Pfeiffer of Hartley, alternate delegate.

#### Sac County

The Sac County Medical Society met in regular session on Friday, March 15, for dinner and a business meeting. Ten members were present, three being prevented by illness. Matters under discussion included: contract for medical care of the poor; Red Cross nursing service; immunization problems; inter-professional organizations; and the Basic Science Bill. The society voted to send a member to Des Moines for the final vote on the bill. Adjournment followed a decision to meet in April at Early, for a meeting devoted entirely to scientific papers.

J. R. Dewey, M.D., Secretary.

#### Scott County

Charles F. Sherwin, M.D., associate professor of surgery, St. Louis University School of Medicine, was guest speaker for the Scott County Medical Society at its meeting held in Davenport, Tuesday, April 2. Dr. Sherwin addressed the group on The Selection of Approved Methods and the Treatment of Tumors of the Head and Neck.

#### Washington County

The Washington County Medical Society held its March meeting, Tuesday, the twenty-sixth, following a six-thirty dinner served at the Congress Hotel in Washington. H. C. Willett, M.D., of Des Moines, conducted a clinic on diseases of the skin. A dozen cases of various types of skin diseases were furnished by members of the society.

W. S. Kyle, M.D., Secretary.

#### Woodbury County

A joint meeting of the Woodbury County Medical Society, and members of the Fourth Councilor District, was held in Sioux City, Tuesday, March 19. One hundred members and guests, many from Nebraska and South Dakota, assembled for the six-thirty dinner and following program: The Socialization of Medicine from the Viewpoint of the Sociologist, C. H. Graening, M.D., of Waverly; The Socialization of Medicine in Foreign Countries, E. M. Myers, M.D., of Boone; American Attempts at the Socialization of Medicine, M. B. Call, M.D., of Greene; The Socialization of Medicine from the Viewpoint of Organized Medicine, James C. Hill, M.D., Newton; and a Summary of the Subject, John H. Henkin, M.D., Sioux City.

R. N. Larimer, M.D., Secretary.

#### Second Councilor District Meeting

A special meeting of physicians located in the Second Councilor District of the Iowa State Medical Society was held in Mason City, Friday, March 1. Dinner was served at six-thirty, after which T. C. Denny, M.D., of Des Moines, spoke on The Emergency Medical Relief Program in Iowa. Daniel J. Glomset, M.D., also of Des Moines, discussed plans for the postgraduate course which was scheduled to begin at Hampton, Thursday, April 4.

#### Sixth Councilor District Meeting

T. C. Denny, M.D., of Des Moines, also addressed a special meeting of the Sixth Councilor District, Thursday, February 28, at Marshalltown. T. F. Thornton, M.D., of Waterloo, presented a report of the called meeting of the House of Delegates of the American Medical Association. The program followed a six-thirty dinner served at the Hotel Tallcorn.

#### Southwestern Iowa Postgraduate Medical Society

Members of the Southwestern Iowa Postgraduate Medical Society met in Clarinda, Wednesday, March 20, for the following program: Management of Head Injuries, Walter D. Abbott, M.D., of Des Moines; Paget's Disease, F. K. Burnett, M.D., of Clarinda; and Hematoporphyrinuria, Charles F. Oberman, M.D., of Clarinda.

#### Tri-County Medical Society

The Tri-County Medical Society, composed of physicians in Henry, Jefferson, and Washington counties, met in Mt. Pleasant, Thursday, February 28, for a dinner meeting, after which the following program was presented: Peripheral Nerve Injuries, Walter D. Abbott, M.D., of Des Moines; Common Fractures of the Wrist Joint, Arthur W. Erskine, M.D., of Cedar Rapids; and What of Your Economic and Professional Future?, Oliver J. Fay, M.D., of Des Moines. Dr. Thomas A. Burcham of Des Moines, president-elect of the Iowa State Medical Society was a guest of the society.

#### INTERESTING NEWS

##### In Brief

A thermolabile blood-clotting property has been demonstrated in human mother's milk. Milk from animals does not have this hemostatic property.

Hypnotism has been employed with reported success in the treatment of stuttering at the Marine Hospital in San Francisco.

To give the public scientific knowledge of the structure of the human body and the life processes, an elaborate health exposition called The Wonder of Life, opened in Berlin on March 23.

In spite of the untiring efforts of public health officials and physicians of this country, tuberculosis still ranks first as the cause of death in persons between twenty and forty years of age, according to statistics of the National Tuberculosis Association.

Employing a thymus extract developed by Dr. A. M. Hanson of Faribault, Minnesota, investigators at the Philadelphia Institute for Medical Research have reported that growth in experimental animals may be speeded up to three times the normal rate.

A recent survey of 173 obituaries which were published in one month's issue of the JOURNAL OF THE



AMERICAN MEDICAL ASSOCIATION revealed that one hundred doctors had died of diseases of the heart and circulation.

The recent isolation of a chemical substance known as urushiol from the bark of the poison ivy plant may shed light on certain forms of occupational dermatitis, since this same substance has previously been demonstrated by Japanese chemists in the raw material from which Japanese lacquer is made.

Nine cases of carcinoma, definitely due to arsenic, and five additional cases probably caused by this agent, have recently been reported, with a warning that the prolonged use of arsenic-containing medicines or superficial exposures to arsenic may result in the production of malignant tumors.

By modifying the technic of the Aschheim-Zondek reaction for pregnancy, investigators at the University of Chicago announced the use of a carp-like fish, which, swimming in a water containing a small amount of urine from a pregnant woman, develops its long protruding oviduct.

Of especial interest in the study of gastric ulcer is a discovery announced by the Courtauld Institute of Bio-Chemistry in London of a new substance found in the posterior pituitary gland, which controls the activity of the acid secreting cells of the stomach.

Deserving of laudatory notice are the educational activities of the Philadelphia County Medical Society and the Medical Society of the State of Pennsylvania in preparing and distributing a pamphlet of unusual merit entitled, "The Early Signs and Symptoms of Cancer."

#### PERSONAL MENTION

Dr. Benjamin G. Dyer of Ames, has received an appointment as eye, ear, nose and throat surgeon, at the Santa Fe Railroad Hospital in Topeka, Kansas.

Dr. J. L. Augustine of Ladora, who has practiced in that community for the past forty-two years, has retired from active practice. Dr. A. C. McKean, formerly of Norway, Iowa, is moving to Ladora to take care of Dr. Augustine's practice.

Dr. John W. Thornton of Lansing, spoke before the local Kiwanis Club, Monday, March 4, on the subject, "Heart Diseases and Ailments".

Dr. S. J. Ritchey has located in Colfax for the practice of medicine and surgery. He is a graduate of the State University of Iowa, College of Medicine,

served his internship in Albany, New York, and for the past eighteen months, has been taking post-graduate work at the University of Minnesota.

Dr. A. W. Brunk is moving from Prescott to Linden, where he will open an office for the practice of medicine. Dr. Brunk practiced in Linden several years ago.

Dr. C. V. Lawton, who has practiced in Grinnell for the past eleven years, has accepted a position as a member of a clinic in Jamestown, North Dakota.

Dr. John H. Faust, formerly of Huron, South Dakota, has located in Newton. He is a graduate of Northwestern University College of Medicine.

Dr. Bernhard B. Gloeckler expects to arrive in Mt. Pleasant, about April 15, to open an office. Dr. Gloeckler was graduated from the State University of Iowa, College of Medicine in 1930, and comes to Mt. Pleasant from Colorado Springs, Colorado, where he has been connected with the Union Printers Home and Tuberculosis Sanatorium.

#### MARRIAGES

Miss Irene Klinger of Cedar Rapids and Dr. Robert M. Chapman, also of Cedar Rapids, were united in marriage Saturday, March 2, at St. Paul's Methodist Church in Cedar Rapids. The young couple will make their home in Cedar Rapids, where Dr. Chapman has been practicing for the past two years.

#### DEATH NOTICES

Schooley, Alfred Heaton, of Terril, aged sixty-four, died March 18 after an illness of several months from cancer of the stomach. He was graduated in 1902 from the State University of Iowa, College of Medicine, and at the time of his death was a member of the Dickinson County Medical Society.

#### MEDICAL RELIEF PROGRAM

If there are any county or district societies that are interested in having the details of the plan that has been set up for the use of federal and state funds for medical relief purposes in Iowa, Dr. T. C. Denny, medical director of the State Emergency Relief Administration, will be glad to speak to the members of your society on that subject. Arrangements for such a program can be made either through the state society offices or directly with Dr. Denny. If such a program is scheduled, however, it is advised that no other talks or papers be planned for that meeting. This plan is somewhat involved and with the discussion that it evokes, the full discussion of the subject makes a full evening's program.

# HISTORY OF MEDICINE IN IOWA

*Edited by the Historical Committee*

\*DR. HENRY B. YOUNG, Burlington  
DR. FRANK M. FULLER, Keokuk  
DR. JOHN T. McCLINTOCK, Iowa City

\* Deceased

DR. TOM. B. THROCKMORTON, Des Moines  
DR. WALTER L. BIERRING, Des Moines  
DR. WILLIAM JEPSON, Sioux City

## A History of Medicine in Jefferson County, Iowa

JAMES FREDERIC CLARKE, M.D., F.A.C.S., Fairfield

(Continued from last month)

### THE CIVIL WAR PERIOD

The great war of the rebellion came to disturb the prosperity and development of Jefferson County as it did that of the whole country. Jefferson County doctors took their part in the struggle. Only two won distinction in the army; Dr. P. N. Woods<sup>202</sup> became a division surgeon and went with Sherman to the sea; Dr. R. J. Mohr<sup>124</sup> became a brigade surgeon and had a distinguished career. (See details in appendix.) Dr. Leshner<sup>105</sup> was a hospital steward; Dr. Bartow<sup>8</sup> served in Company A, 36th Iowa Infantry; Dr. J. W. Hayden<sup>78</sup> was for three years a hospital steward; Dr. J. E. King<sup>100</sup> was in Company E, 20th Illinois Infantry; Dr. C. G. Lewis<sup>107</sup> was assistant surgeon of the 30th Iowa Infantry; Dr. H. M. Shafer<sup>164</sup> was with the 4th and 16th Ohio Volunteer Infantry; Dr. Chas. S. Clarke was with the "Home Guards;" and Dr. J. M. Shaffer examined recruits at Burlington. Those left in Jefferson County during the war were: Drs. Myers, Ware, Steele, Clarke, Collins, Dial, Mealey and Ream. Dr. Shaffer made almost daily trips from Burlington to Fairfield to care for his patients.

During the absence of Dr. P. N. Woods, Dr. W. C. Dial<sup>51</sup> took charge of his practice. The only record now known of the life of Dr. Dial is an old account book and a death notice in the *Ledger*. This account book is, however, revealing. Among his patients were the most prominent citizens of the town and his interlined account notes are full of interest as they are interpreted by C. J. Fulton in the "Annals of Iowa." He rode about in a sulky over the bad roads of that day. We know this because of his bills for broken springs. He charged 50 cents for a call and medicine in town and as much as \$3.00 for a long call in the country. Because dollars were scarce he accepted other things than money in payment for

his services. Here are some of the credits in this interesting account book: corn, hay, wood, coal, flour, beef, pork, ham, chickens, eggs, potatoes, tomatoes, groceries, honey, apples, blackberries, stockings, jam, vials, bottles, making a linen coat, making pants, cassimeres and lining of pants, tailored vest, cutting wood, shoeing horse, repairing sulky spring, a violin, an oil painting. The following credits were given for these items: corn, 16 cents to 20 cents; oats, 15 cents; hay, \$2.00 a ton; flour, \$1.75 a hundred weight; beef, 3 cents a pound; pork, 2½ cents a pound; chickens, \$1.00 a dozen; and eggs, 3 cents a dozen. Now in 1933, in this depression, the barter for medical services is again becoming common.

Dr. Dial died September 1, 1864, at the early age of thirty-one years, "loved and respected by all who knew him," says the weekly *Ledger*. The most interesting part of Dr. Dial's accounts, however, are such notes as these written in here and there among the settlements: "I hereby donate the above to Mrs. A. as she has lost her husband by death in the army of the United States," and again: "I hereby donate the above claim to this family because of the father's death in the army of the United States and of the Lord." There is one claim not donated; after it is written: "Deserter of his country, God, too, I believe." A kind hearted, generous, patriotic, just man was this Dr. Dial.

### HOMEOPATHY IN JEFFERSON COUNTY

Then came Hahnemann to Jefferson County in the person of Dr. Joel E. King<sup>100</sup> in 1865. Dr. King arrived at the Fairfield Hotel at an opportune moment: when the son of the hotel keeper was desperately ill, with (probably) typhoid fever. The two attending physicians met Dr. King in consultation and surrendered the case to him. Dr. King's daughter, in a family biography, says:



"Father knew that he not only had the sickness to deal with but the result of strong medicine." Dr. King took charge and the patient recovered. Dr. King's reputation was made and his practice rapidly grew to large proportions.

Dr. Joel King's father was a regular physician. In his early life, before coming to Fairfield, Joel had been a minister, a circuit rider and later a hospital steward in the war. After his discharge from the army he studied homeopathy and began its practice. When we read Dr. Shaffer's diary today do we wonder that Dr. King changed his school of medicine? The regular school bitterly opposed him. Dr. Shaffer calls the new doctor in one note: "Homeopathic King," and again when taking charge of a patient he remarks: "He has been ill some days and has been subjected to that most unmitigated of all humbugs, homeopathic treatment." This "subjected" patient, we learn later in Dr. Shaffer's diary, died of cancer of the liver, diagnosed at the autopsy.

The writer, when he began to practice medicine in Fairfield in 1890, together with all his colleagues, fought homeopathy. Dr. J. V. Bean<sup>9</sup>, one of the best read physicians of his time in Fairfield, at an even later date threatened in a society meeting to have the Jefferson County Medical Society disbarred from the Iowa State Society because it voted to admit Dr. Connor<sup>34</sup>, homeopathist, to membership. Today it seems to the writer that we should bless Hahnemann because, although many of his teachings are absurd, yet from it all came the blessing of a turning of the regular medical profession away from over-medication. Hahnemann inadvertently taught us that people get well without calomel to salivation, bleeding to prostration, and blisters to produce a "healthy pus." Our Johnnie Harrises with Albee bone splints and peaceful rest, become strong and well today with only fresh air for medicine.

Today the regular physicians of Jefferson County have changed their antipathy from homeopathy to "Christian Science," "osteopathy" and "chiropractic" because they know these cults have no sound scientific basis. There is no doubt that the profession's disregard for psychology and manual manipulations had opened the way for the development of these tangents to medical practice. These "schools of healing" may serve a useful purpose in forcing regular doctors to give more attention to mental influences. All such cults are comparatively unimportant in the march of time, because their practitioners' meager knowledge of scientific facts leads them to illogical extremes. Compared with the age of our profession all sects are short lived.

The following remarks by one of our most hon-

est and popular post-war doctors serve as an illustration of the fondness of the laity for the laying on of hands, and positive assertions by the doctor (regardless of his real knowledge), as to the pathology of the condition and the action of his drugs. Dr. David Stever<sup>178</sup> won his success by the "laying on of hands" and his graphic, positive declarations of the battle of disease and his medicines inside the patient. This, Dr. Stever told a confrere, was the easily understood cause of Miss A.'s death. She had two ulcers on the right bronchus and three on the left. The doctor healed the ulcers on the right bronchus without any trouble, but those on the left "kept a'eating and a'eating until they et the bronchus right off: the lung fell down over the heart and smothered her to death." To another patient he described how he had valves all along his small bowels. What the doctor had to do with cathartics was to get these "to shedding the right way—then everything would be all right." Two of Dr. Stever's favorite diagnoses, after looking intently at a patient across his desk, were: "the trouble is with the finer uriniferous tubules of your left kidney" or "the trouble is with the peptic glands of your stomach," as the case might be. The writer knew the doctor well and believes his opinions were sincere and honest. By what mental process he arrived at these conclusions is a mystery. How satisfying to a patient to feel that the doctor knows just what is the matter!

The methods of the practice of medicine in Jefferson County during and following the Civil War continued, in the main, unchanged from those of pre-war times. There were no clinical thermometers, no hypodermic syringes, no microscopes. Vaccination for smallpox was not common. As late as 1874 the vaccine used was the "scab" from a former vaccination. At times a very severe cellulitis resulted from vaccination. The writer's sister nearly lost her life from the violent infection following such a vaccination. So frequent were these mixed infections that people feared and refused vaccination, and smallpox often occurred in a severe form. At a time, shortly following the rebellion, Dr. George Myers<sup>133</sup> was paid \$100.00 a day to care for the smallpox cases of the county. He was allowed to do nothing else. When a death occurred the patient's body was buried at night and the burial attendants were given new clothes. Those worn at the interment were burned.

In 1865 Dr. Shaffer gave ether to Mrs. Hughes and extracted her teeth. This was the first anesthetic of record in Jefferson County. On December 28, 1866, Dr. Shaffer purchased a "coal oil lamp." Such lamps were made in 1863 but not

many were in use in 1866. The doctors' early expense accounts show frequent purchases of candles.

In 1866 in a case of foot infection "with red lines to the knee" Dr. Shaffer used an elm poultice. In 1871 "Hughes and Mrs. Darling both had remarkable cases of dropsy." Mrs. Darling died and at autopsy was found to have scirrhus of the liver. Mr. Hughes' edema was never diagnosed. Dr. Shaffer, much later, says "the urine is throwing down plenty of sediment." No chemical examination was made.

In 1870 Dr. Shaffer's brother was ill. While Dr. Shaffer was away Dr. O. called to see the sick man. Dr. Shaffer has this to say of Dr. O.'s visit: "Dr. O., like the cursed fool that he is, went to see Chris and retailed how he himself had once been in a similar fix and finally wound up in a lunatic asylum!! This was so comforting to Chris' nervous system that he well nigh went off in a convulsion fit and it took a dozen hours to recover himself." Every doctor in his practice has had similar experiences. They are not confined to any historical period. The best friends of our patients relate to them the sad outcome of "similar" cases. One at those times agrees with Mark Twain in considering people "mostly fools."

At a meeting of the Iowa State Medical Society at Burlington in June, 1858, Dr. N. Steele was present from Fairfield as a delegate. (?) At the Des Moines Valley Medical Society organization at Ottumwa in 1873, Dr. Richard J. Mohr and Dr. J. G. Ware were the only doctors present from Jefferson County. There was no Jefferson County Medical Society in 1876. Dr. G. H. Blair<sup>16</sup> of Fairfield was elected Secretary of the Iowa State Homeopathic Society in 1870. These are the only records found of activities of Jefferson County doctors in medical societies before 1885. In 1876 there were fourteen doctors in Fairfield.

#### 1880 AND AFTER

As late as 1878 there continued in Jefferson County the prevalence of malaria which had existed from an early day. Its cause was considered to be "night air" and the green algae so prevalent on stagnant waters. The writer remembers, as a young drug store clerk, making and selling dozens of bottles of an emulsion of chinoline which every farmer demanded. Quinine was expensive and the cruder alkaloids of cinchona were more frequently used. Dr. David Stever,<sup>178</sup> who had the reputation of being an excellent nurse, related this experience to a colleague: He had a patient in the country very ill with "typho-malaria." He had in his saddle bags, a quart of whiskey and an ounce of quinine. He "dissolved" the quinine in the whiskey, stripped the patient and rubbed this "into the skin." The patient recovered. The doctor tri-

umphed over death. The solubility of quinine sulphate in whiskey; the absorbability by the skin of an alcoholic solution; the effect of 480 grains of quinine in one dose if absorbed; these minor questions were not considered in the emergency. The diagnosis "typho-malaria" was common in Jefferson County as late as 1890.

Dr. Harry Woods,<sup>203</sup> now himself seventy-six years of age, remembers compounding medicines for his father, Dr. P. N. Woods<sup>202</sup> in this post war period. His method of making "neutralizing cordial" was as follows: "Take two ounces of salaratus, one ounce of cinnamon bark, and one ounce of yellow root. Put these (after pounding in a big iron mortar) in one pint of 50 per cent alcohol. Macerate for two weeks; then add 1½ pounds of sugar and water to make one gallon, and peppermint to flavor." This cured most children's complaints. Fortunate children, because if they had been born thirty years earlier, they would have been given much less palatable mixtures.

Probably in every community there are many folk stories current in the profession, and illustrative of the time before the law required the doctor to have an education, we give a very few from Jefferson County. Two doctors were riding into the country for a consultation. They fell into a discussion of the death, from "inflammation of the bowels" of a patient of another practitioner. "Do you know what I would have done in that case?" asked Dr. L. "No," replied Dr. F., "I have no idea." (No one would, for Dr. L. had spent two whole months in a medical school.) "I would," replied Dr. L., "have introduced a Gouleys Trochar into that abdomen and poured in two ounces of compound tincture of capsicum on those — — — intestines and seen how they liked that." Dr. F. said that he would not himself have thought of that procedure.

At a later date the writer was called in consultation with Dr. L. in a case of pneumonia. As requested he took out a trained nurse for the patient. Finding the sick woman nearly moribund the writer suggested that the nurse give a hypodermic of strychnia immediately. This was given in the left chest. Dr. L. then asked the nurse "May I ask why you gave that to the left of the circle?" The puzzled nurse then asked, "What circle?" Dr. L. replied, "The circle of Willis."

The same Dr. L. while washing his hands, in a country home, saw a black cat in the yard. He asked if he might have this black cat. "I have a patient who needs it," he remarked. The "Hoosier School Master" records the use of a black chicken in the treatment of the shingles, but in what disease this black cat was sacrificed we do not know.

(To be continued)



# THE JOURNAL BOOK SHELF

## BOOKS RECEIVED

**ANNUAL REPORT OF THE SURGEON GENERAL OF THE PUBLIC HEALTH SERVICE OF THE UNITED STATES—**For the fiscal year, 1934. United States Government Printing Office, Washington, 1934. For sale by the Superintendent of Documents, Washington, D. C. Price, seventy-five cents.

**THE AUTONOMIC NERVOUS SYSTEM—**By Albert Kuntz, Ph.D., M.D., professor of micro-anatomy, St. Louis University School of Medicine. Second edition, greatly enlarged and thoroughly revised. Octavo of 697 pages, illustrated with 73 engravings. Lea & Febiger, Philadelphia, 1934. Price, \$7.50.

**BODY MECHANICS IN THE STUDY AND TREATMENT OF DISEASE—**By Joel E. Goldthwaite, M.D., Lloyd T. Brown, M.D., Loring T. Swaim, M.D., and John G. Kuhns, M.D. J. B. Lippincott Company, Philadelphia and London, 1935. Price, \$4.00.

**HOW TO PRACTICE MEDICINE—**By Henry W. Kemp, M.D., New York. Paul B. Hoeber, New York, 1935. Price, \$2.50.

**INTERNATIONAL CLINICS—**Volume IV, Forty-fourth Series. Edited by Louis Hamman, M.D., visiting physician, Johns Hopkins Hospital. J. B. Lippincott Company, Philadelphia and London, 1934. Price, \$3.00.

**MORTALITY AMONG PATIENTS WITH MENTAL DISEASE—**By Benjamin Malzberg, Ph.D., New York State Department of Mental Hygiene, Albany, New York. State Hospitals Press, Utica, New York, 1934.

**OBSERVATIONS OF A GENERAL PRACTITIONER—**By William N. Macartney, M.D. Richard G. Badger, Publisher, The Gorham Press, 100 Charles Street, Boston, Massachusetts.

**PERIODIC FERTILITY AND STERILITY IN WOMAN—**A Natural Method of Birth Control—By Professor Herman Knaus, head of the clinic for gynecology and obstetrics, of the German University of Prague. With 64 illustrations and 12 tables. Wilhelm Maudrich, Publisher, Vienna, 1934. Price, \$6.50.

**REPORT ON SEVENTH INTERNATIONAL CONGRESS OF MILITARY MEDICINE AND PHARMACY—**Held in Madrid, Spain, May-June, 1933. By Captain William Seaman Bainbridge, M.C.-F., U.S.N.R. George Banta Publishing Company, Menasha, Wisconsin, 1934.

**SURGICAL APPLIED ANATOMY—**By Sir Frederick Treves, Bart. Ninth edition, revised by C. C. Choyce, M.D., professor of surgery, University of London. Illustrated with 174 figures, including 66 in color. Lea & Febiger, Philadelphia, 1934. Price, \$4.00.

**THE YEAR BOOK OF GENERAL MEDICINE, 1934—**Edited by George F. Dick, M.D., Lawrason Brown, M.D., George R. Minot, M.D., William B. Castle, M.D., William D. Stroud, M.D., and George B. Eusterman, M.D. The Year Book Publishers, Inc., Chicago, 1934. Price, \$3.00.

**THE YEAR BOOK OF GENERAL SURGERY—**Edited by Evarts A. Graham, M.D., professor of surgery, Washington University School of Medicine. The Year Book Publishers, Inc., Chicago, 1934. Price, \$3.00.

## BOOK REVIEWS

### THE 1934 YEARBOOK OF UROLOGY

Edited by John H. Cunningham, M.D., associate in genito-urinary surgery, Harvard University Postgraduate School of Medicine. The Year Book Publishers, Inc., 304 South Dearborn Street, Chicago, Illinois, 1934. Price, \$2.25.

For one reason or another many practitioners find it difficult or impossible to attend medical meetings which are to their particular interest. Everyone desires to keep abreast of the times, and this edition which appears annually enables one to cope with such a situation.

The work in the field of urology for the past year is accurately and completely depicted although obviously not in detail. It abounds in case reports and statistical studies, and the reference material also adds to its value. The high points presented are: the prevention of complications in urinary infections; the debate for and against prostatic resection, with a tendency to an appraisal of its proper place in the relief of prostatic obstruction; the chapter on the ketogenic diet and the relationship of Vitamins A and D with stone formation; surgical procedures involving the adrenal, kidney, ureter and urethra; and the care of acute and chronic Neisserian infections by recognized authorities.

It is a worthwhile volume and should be valuable to all who are engaged in general practice, and especially to those interested in urology.

W. R. H.

### SCULPTURE IN THE LIVING

By Jacques M. Maliniak, M.D., Attending plastic and reconstructive surgeon at Sydenham Hospital, New York City. The Lancet Press, 80 Lafayette Street, New York, 1934. Price, \$3.00.

Many conditions definitely in the field of plastic surgery do not receive competent treatment since the condition is either overlooked or minimized by the family physician. Such patients frequently develop neuroses far more handicapping than their physical defect, and from this cause make shipwrecks of their lives. Still another group fall into the hands of blatant quacks, who frequently strip them of their wealth, and either fail to correct their deformity or, in many cases, produce an even more unsightly defect.

It seems, therefore, entirely fitting that the subject of plastic surgery should be presented in its entirety for the benefit of the general practitioner and the specialist who lacks time for original investigation and study of the subject. In this volume the author discusses the repair of the skin, the reconstruction of the nose, the rebuilding of lips, breast repair, deformities about the eyes and ears, operations for the aging face and form, problems of facial asymmetries and bone carpentry, and in the final chapter covers the legal and illegal aspects of plastic surgery.

The volume is well written, and supplies in a pleasing form scientific information on the benefits and limitations in the rebuilding of the face and form by plastic surgery.

### PSYCHOPATHIA SEXUALIS

With Especial Reference to the Antipathic Sexual Instinct. By Dr. R. v. Krafft-Ebing. Revised edition. Eugenics Publishing Company, New York, 1934.

The new twelfth edition of this already well known treatise presents the ripe experience of an author who has devoted his entire life to this problem. Employing the medium of case reports, the author discusses the psychology of the sexual life and the abnormalities which develop when this psychology is disturbed. This medico-forensic study is brought into a complete and masterful summation in the closing chapter of the volume, which deals with the pathologic sexual life before the criminal forum.

While prepared primarily for the use of the medical and legal profession, this volume should appeal to every student of psychology and sociology, and those with a sufficient biologic background to appreciate the scope and importance of these problems as they affect the fabric of human society.

This is the final edition of this great work by Dr. Krafft-Ebing, since the author suffered a fatal illness while this manuscript was in the hands of his printer. The student interested in these problems should, therefore, procure this edition if he would have the mature opinions of this great authority.

### A TEXTBOOK OF MEDICAL PSYCHOLOGY

By Ernst Kretschmer, Dr. Med., professor of neurology and psychiatry, University of Marburg. Oxford University Press, New York and London, 1934. Price, \$5.00.

Psychologic phenomena insofar as they are taught at all in our medical schools, are approached from either the materialistic or the dualistic point of view. The current tendency, however, is to employ a monistic conception, envisaging the human organism as a whole, and granting mental phenomena but one phase of reaction in that organism. That phenomenon can then be studied in its own terms and manifestations, avoiding an appealing but confusing physio-psychology.

Kretschmer, known in this country chiefly through his book on physique and character, has written a purely psychologic psychology. The book is presented in the following five parts: the chief psychic functions and their anatomic and physiologic basis; the psychic apparatus and its evolution; instinct and temperament; personality and reaction types; practical medical psychology.

His chapters on the nature of the soul (psyche) and on the evolution of the psyche with a discussion of primitive modes of mental expression are superb. Such mental processes as dreams, twilight states, and schizophrenic thought are remarkably elucidated.

This book is for the initiated and cannot be recommended for cursory reading. It contains a large amount of informative material and although in translation, its style is brilliant.

M. S.

### MEDICINE MARCHES ON

By Edward Podolsky, M.D., Brooklyn, New York. Harper & Brothers, Publishers, New York and London, 1934.

During the past few years there have been a number of well written histories of medicine and medical achievement. None to our knowledge has brought to the lay reader the insight into the most recent and even the most technical medical advancement in a style more pleasing or fascinating than that employed by Dr. Podolsky in this volume.

Here we find explained in non-technical language the latest developments in all fields of medicine and surgery. He discusses the maggot treatment of infected wounds; sympathectomy for the relief of pain in cancer, heart disease and trifacial neuralgia; he explains the uses and dangers of dinitrophenol in the treatment of obesity; he cites the modern use of methylene blue in carbon monoxide and potassium cyanide poisons, and the mysterious workings of the bacteriophage. On and on, through one chapter after another, the majestic march of medicine is painted in inspiring word pictures, which will claim the complete attention of the reader to the last page.

Entirely lacking in propaganda and shorn entirely of suggestions which might be construed to imply self-medication, the volume richly deserves a place in every home and may be safely recommended by the physician.

### SOCIAL INSURANCE AND ECONOMIC SECURITY

By Edward H. Oschner, M.D., Consulting surgeon, Augustana Hospital, Chicago. Bruce Humphries, Inc., Publishers, Boston, 1934. Price, \$2.50.

Foremost in the attention of medical leaders today are the problems dealing with a modification of medical practice as implied in the terms state medicine, socialized practice, or health insurance. Unfortunately most of the previous works on this subject have been made by persons of avowed preference or those who would profit directly or indirectly by their findings. It is, therefore, both interesting and timely that a study of these problems should be made by a physician no longer in practice, but one who has an enviable background for judgment, and one who can view the problem as a citizen and taxpayer on the one hand and as a physician on the other.

In this book Dr. Oschner discusses the problems of social insurance from many angles, and compares those systems proposed in this country with like or similar systems now in operation elsewhere. His conclusions are summed up as follows: "As one who loves his profession, I protest most vigorously against the mechanizing and mediocratizing of the medical profession; as a taxpayer I object to adding to our already burdensome taxes; and as an American citizen, I am opposed to the breaking down of the morale of my fellow-countrymen, which, I believe, is the inevitable consequence of any system of social insurance which could be devised."



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### THE AUTOPSY\*

JOHN C. HANCOCK, M.D., Dubuque

Autopsy, postmortem examination and necropsy are the terms used to designate the examination, largely by dissection, of the dead body for the purpose of determining the cause of death in respect to the etiology, location, and nature of the fatal disease process. Of late the term necropsy has gained preference in usage and has the advantage of prompt and easy contrast with biopsy or the study of the pathology of living tissue.

Moynihan<sup>1</sup> in particular has stressed the value of living pathology as enabling the observer to study disease processes in the earlier stages *per se*, and before the picture has become compromised by secondary extension to many organs, or confused by intercurrent processes or multiple degenerative changes in the terminal stages. While this is very true and biopsies should be conducted whenever possible, the field is limited; whereas necropsies, in the absence of destruction of the corpus by burning, explosion, etc., can be universally applied. An orthopedist was complaining of the difficulties which beset the treatment of painful backs. I asked him what the pathology showed. His reply was that because the disease was not fatal necropsy findings were not available. This illustrates the desire for autopsy findings and the limitations of the biopsy. The limitations of the biopsy field in the study of living pathology offset the disadvantages of the presence of the terminal stages found at necropsy. The two methods of examination are, therefore, not comparable nor competitive but rather the necropsy may supplement the biopsy in due course. The biopsy is in fact an offshoot of the autopsy since the development of cellular pathology and bacteriology.

The autopsy while practiced sporadically for various purposes in remote times, according to Singer,<sup>2</sup> even before anatomic dissections, it was not until the middle of the nineteenth century that

it became an orderly procedure. It was required by law that the Bourbon kings of France should be autopsied in order to detect violence and I have been informed that the rulers of Great Britain must be autopsied presumably for a like reason.

No attempt will be made to review the history of the autopsy chronologically, but its history will be connoted by the mention of the names of men in whose debt modern medicine has stood for its very foundation. Many of these names are in daily use with rarely a pause for grateful memory. Vesalius, Eustachius, Paré,<sup>3</sup> whose modesty led him in a successful issue to say, "I dressed him and God healed him," Donatus, von Grafenburg, Bartholin, Malpighi, Glisson, Sylvius and Riva. Theophilus Bonetus (1620-1689) published his "Sepulchretum seu Anatomia Practicum" and made a declaration of principle regarding the autopsy that holds equally good today and is worthy of quotation—"Let those who interdict the opening of bodies well understand their errors. When the cause of a disease is obscure, in opposing the dissection of a corpse which must soon become the food of worms, they do no good to the inanimate mass, and they cause a grave damage to the rest of mankind; for they prevent the physicians from acquiring a knowledge which may afford the means of great relief, eventually, to individuals attacked by a similar disease. No less blame is applicable to those delicate physicians, who, from laziness or repugnance, love better to remain in the darkness of ignorance than to scrutinize, laboriously, the truth; not reflecting that by such conduct they render themselves culpable toward God, toward themselves and toward society at large." Others are Morgagni, John Hunter, Matthew Baillie, Bichat, Rokitsansky and Skoda. Virchow's introduction of the chemical and histologic technic marked the beginning of the modern autopsy. In this country Samuel D. Gross<sup>4</sup> in 1839 published the first great American work on the subject. Since the field of the autopsy became established many earnest and brilliant workers have devoted their lives to the development of new

\* Read before the Austin Flint-Cedar Valley Medical Society, Cedar Falls, June, 1933.

and better methods and technic. Today a well conducted autopsy is as orderly and even artistic as any surgical procedure, barring the aseptic technic.

Because the preservation of life is a primary instinct with almost all peoples, because life without health is of questionable value, and because nature yields many of her secrets grudgingly, people generally in respect to disease, at least, have developed a spirit of mutual helpfulness. Therefore, medicine has probably become the line of human endeavor which is freest of all in respect to international or climatic barriers. In spite of this people have not as yet adopted the principle that the living must pool their interests as against the dead and learn by the autopsy findings without injury to the dead the lessons which will improve the status of the living. Also, just as beauty, talent, grace, and charm are often widely disseminated, and while congregating in are not specially indigenous to large centers, so are interesting and unusual diseases. It becomes the duty therefore of everyone everywhere to contribute to the sum total of human knowledge to the end that accuracy of facts may be attained and with this intelligent treatment or, better still, prevention, be deduced. As it is unreasonable and unfair to expect or ask another to do what one would not do oneself, members of the medical profession should lead the way in specifying that the autopsy be performed on themselves and the members of their family. Lacking a qualified colleague a prominent Canadian surgeon told me that he had performed an autopsy on his own father.

Diagnosis is the most intellectual part of medicine and the only phase of practice in which one may legitimately take a selfish interest. Diagnosis depends upon and has its interest in a carefully taken history and a painstaking and thorough examination including all up-to-date accessories and adjuncts. Both of these rest upon accuracy of facts known and elicited. Treatment is for the benefit directly of the patient but there can be no intelligent treatment without a correct diagnosis. For the practitioner it should be a source of chagrin and sadness to have a patient recover with an incorrect diagnosis and hence improper treatment. From this point of view let us consider some of the more practical aspects of the autopsy.

The autopsy is the most distinctly professional feature of the practice of medicine and the least appreciated by the public. In a large measure the leadership of the German school of medicine has rested upon the coordination and cooperation between the clinician and pathologist. The German clinician wasted little time in lamenting the death of his patient provided his diagnosis was correct.

This sounds callous and heartless, but it is not, because if the diagnosis was correct a foundation was laid for devising new and better treatment; otherwise the patient died in vain. The pathologist's point of view is—what matters a death here and there if by study something constructive is added to the sum total of human medical knowledge for the benefit of the whole of mankind? For instance a patient died at ninety-seven years of age ten weeks after a broken hip and at autopsy bony union was found. Until this time I had been unable to find the limit of age for bony union. Some one has said "Pathology is the soul of diagnosis."

In any attempt to estimate the degree of accuracy of diagnosis in this country several factors must be considered. In the first place it is held that probably less than one per cent of the dead come to autopsy. This probably means that many cases may be in the main clinically correctly diagnosed and more likely a relatively larger per cent of obscure, difficult or complicated cases come to autopsy. In this latter category one might reasonably expect a higher percentage of errors. However, experience shows that in the absence of the autopsy no case can be exempted from the unexpected in anatomic anomalies and in complications of disease processes. Cabot<sup>5</sup> and Friedrichs<sup>6</sup> independently found that in eight per cent of cases the principally diseased organ was not indicated. When it is realized that in these analyses the cases had been in the hands of highly trained diagnosticians, one realizes that the percentage of error would be greatly increased if the figures were derived from an analysis of the cases of the average practitioner. When refinements of diagnosis are extended to include subsidiary items of disease processes the percentage of error is subject to a great increase. McNamara<sup>7</sup> recently studied 200 consecutive autopsies with findings which may be said to represent more fairly the average of the profession although the hospital in question has a full time pathologist and a full time roentgenologist—advantages possessed by few hospitals of its size and not enjoyed by those practitioners not affiliated with a hospital similarly staffed and certainly not by those not connected with any hospital. Briefly his analysis\* showed:

1. Thirty-eight per cent of essentially correct clinical diagnoses. This is slightly less than one in two and a half cases.

2. Thirty-two per cent, or approximately one-third of the total, showed that the major lesion had been missed or overlooked in diagnosis.

\* F. P. McNamara, M.D., pathologist at The Finley Hospital, not only takes care of the autopsy of hospital cases but maintains an "out-patient" autopsy service, as it were, by performing the autopsy on patients brought to the hospital for this purpose or at the undertaker's rooms or in the patient's home.



3. Twenty-eight per cent of essentially wrong diagnoses.

These figures are a serious indictment of the diagnostic acumen of the practitioner having the advantages of hospital affiliation. For the non-hospital contacted physician the figures would, on the doctrine of chances, be more unfavorable. As a criterion of the significance of these figures and to bring the matter home to us let us ponder the degree of equanimity with which the practitioner contemplates the fact that in his own case or that of one of his family a correct diagnosis may be expected once in two and a half times in his home community.

This condition leads directly to the consideration of the value of the autopsy to the medical practitioner. To the student it is of undoubted value in that it illustrates regional anatomy and the textbook word pictures of diseases. To the internist who otherwise inevitably loses contact with regional anatomy and anatomic anomalies it serves to retain these subjects fresh in his mind besides keeping him in touch with morbid anatomy *per se*. The late R. H. Fitz who identified both appendicitis and pancreatitis was a practical pathologist as well as physician at the Massachusetts General Hospital (Boston). When the vacancy at the head of the medical staff occurred he was promptly advanced over the heads of simpler practitioners. The medical student or practitioner approaching surgery had the choice of the avenues of anatomy and pathology respectively. In pre-anesthesia and pre-asepsis days the combination of speed of operation and anatomic precision was the criterion of good surgery. The field was restricted and the titles of operator and surgeon were almost synonymous. However, following anesthesia and asepsis surgeons found that the vast increase in the field of surgery made an intimate study of disease processes of transcending importance, or in other words brain work rivaled manual dexterity. The development of the modern autopsy at about this time gave the surgeon the opportunity to study pathology through biopsy as well as necropsy. As a result of these changes the title of operator unqualified refers to only a part of the field of surgery and many connote a suspicion of opprobrium. The surgeon has ceased to be merely an operator and has become an investigator and a diagnostician as well. Unless adequate steps are taken to counteract the tendency, the practitioner soon loses his grasp of many of the fundamentals of chemistry, physics, anatomy and physiology. The autopsy touch if consistently maintained will enable him to discriminate between sound and false methods of diagnosis as well as treatment. The autopsy con-

tact is relatively easy to make and maintain in hospitals having a pathologist. Waite<sup>8</sup> developed a system whereby a private club takes care of the autopsies of its members' cases in connection with clinicopathologic conferences. To be successful it must be on a sound basis, and offers one solution for communities not served by pathologist-staffed hospitals. As Hektoen<sup>9</sup> has aptly said, "Necropsy percentage is an index of hospital efficiency." This dictum also holds true for private practitioners and in both classes constructive notice should be accorded those making successful diagnoses. For purposes of internship specific requirements in respect to the autopsy are criteria in hospital rating.

The public is first and last the ultimate beneficiary of any and all advances in medicine, and this is in keeping with the cardinal rule that the welfare of the patient is the first consideration in medicine. Naturally the public looks to the profession for guidance but in the matter of the autopsy it is slow to follow advice. If, however, the public is convinced of the honesty and sincerity of the practitioner in his high purpose in seeking the autopsy, prejudices are usually overcome and acquiescence is obtained. Accuracy of diagnosis based on the autopsy is reflected in the family history with reference to familial and hereditary diseases, infections, and faulty methods of living predisposing to perpetuation of a disease among members of a family. It is of importance to have clinical epilepsy separated from unrecognized brain tumor. Unrecognized tuberculosis especially in elderly people is of concern for the family's health. Unrecognized malignancy has its bearing on the cancer problem. As biopsy is particularly difficult in the nervous system the autopsy is of special importance in diseases of the cerebrospinal system.

Indirectly the public stands to benefit through the autopsy in the matter of life insurance. Actuarial statistics are based on vital statistics which are of little value unless most carefully collected. We have seen what the error is in clinical diagnoses. When to this are added the inaccuracies of life insurance examinations, the frequent low standards of requirements, and the element of fraud, it seems more than reasonable to conclude that the acceptance of risks might be greatly refined and ultimately the cost for preferred risks greatly reduced. Life insurance companies have already provided for eliminating the restriction pertaining to professional secrecy in connection with confidential or privileged communications. It would be a short and easy step to add the requirement that all applicants accept as a condition of the contract acquiescence in respect to the automatic

granting of the autopsy.\* Besides accomplishing an apparently selfish but really an unselfish step in securing more accurate vital statistics it would inaugurate a missionary campaign in respect to autopsies of ultimately far reaching importance and benefit to the public. There is perhaps no better leadership in the movement looking to universal autopsies.

Along similar lines the autopsy is of benefit to the state. The state requires a certificate of death and besides the fact of death calls for the cause of death or the diagnosis. In view of the notorious inaccuracy of clinical diagnosis the state should, to be logical and consistent, automatically empower the maker of the death certificate to carry to its logical conclusion the investigation necessary to ensure accuracy of diagnosis. This in the final analysis, as we have seen, means a resort to the autopsy. That the principle is recognized is evident from the fact that in criminal cases of suspected foul play and violence the coroner has power to authorize the autopsy. In civil cases, also, the proceedings are often delayed or confused by lack of information which the autopsy would have furnished. At last accounts there were three counties in this state which had non-medical coroners, usually undertakers. In order to service this medico-legal relation it is suggested that the coroner shall be required by law to be a doctor of medicine. Further and especially to cover areas or political units which have no pathologically staffed hospital, provision should be made whereby the best available pathologist can be retained as a deputy or assistant coroner to cover the autopsy requirement. As a substitute, preferably as a temporary measure only and failing a conveniently located pathologist, a local practitioner having the confidence of his colleagues and the public and being more versed in pathology than the average practitioner, could be appointed deputy coroner to take care of all autopsies. Should the movement toward the universal autopsy develop, the demand for this service will unfailingly create a supply of pathologists.

Meanwhile there are legal restrictions which hinder progress. The principle of property right to the body of the dead establishes a basis for a cause of action on the part of the next of kin or the person properly charged with the duty of burial against the person performing an unauthorized autopsy. In the face of this barrier explicit permission is necessary in order to avoid trouble. The principle harks back two hundred years to the compulsory autopsy for royalty the purpose of which is to detect crime. The only advance that has been made has been to grant public health offi-

cers the right to authorize the autopsy in infectious diseases when the public health is threatened. The benefits of the autopsy in serving vital statistics, study of disease, and the education of students and practitioners are still ignored. Contrast this with the ordinance in one great European medical center in which the dead body of a non-resident must be removed from the city within twenty-four hours after death to prevent its becoming the property of the city. If it becomes city property the body may not only be autopsied but passed on to the dissecting room.

Recently the Supreme Court of New York in the Helen Vasko case accepted a clinical diagnosis at its face value and over the protests of the patient's parents declared an operation necessary and so ordered. If in view of human fallibility in respect to diagnosis and treatment an agency of the state has presumed to supercede parental authority in the medical management of an individual minor, certainly where life is no longer at stake and the public as a whole stands to benefit by the autopsy the state should find it consistent with reason and justice, and compatible with public policy to order the general performance of the autopsy as a preliminary procedure in certifying the cause of death.

Along the lines and for the benefits already indicated the state should automatically grant to the profession the right to perform or have performed the autopsy with a few common sense restrictions. The restrictions should include first, the performance by a qualified person; and second, the avoidance of willful or unnecessary mutilation with special reference to the condition of the body for the funeral ceremony. This state of affairs would leave the body as well preserved as before and the autopsy would enable the body to serve a useful purpose for the living.

Besides legal restrictions requiring authorization for the performance of the autopsy there are obstacles to be overcome in three principal directions, viz.: (1) ignorance and sentiment; (2) ignorance and religion, and (3) ignorance and distrust or fear. The matter of ignorance in each classification can be overcome by respectful and patient explanation of the value of the autopsy and this is the first step in the approach to meeting the other deterring influences. In the matter of sentiment the relatives are chiefly concerned and I have seen individuals who personified refinement and depth of feeling yield in the affirmative as quickly as the less sensitive or more indifferent. Religious scruples are fancied rather than real and if the practitioner is genuinely in earnest he need not hesitate to call upon the clergy to substantiate his assertion that religions in this country do not bar the autopsy. Herein are specifically included

\* An occasional company has the right to require an autopsy incorporated in the policy.



the Protestant denominations, the Roman Catholic Church and the Jewish faith. Coming to the third group, the undertakers, we have to deal not only with the ignorance of the value of the autopsy in individual instances but with the fear on professional grounds that their work may be made harder, and the results, perhaps, jeopardized or at least compromised. Frank understanding and considerate cooperation are all that is needed to surmount this barrier, provided of course that both pathologist and undertaker are competent in their respective fields. Before leaving this phase of the subject I might add that I have found it very effective to promise the relative authorizing the autopsy a true account of the findings and I have made it a point to execute the promise faithfully and as promptly as possible.

We have discussed in connection with the autopsy about everyone concerned, but have said little about the pathologist who after all is an important factor. The pathologist should maintain an open and receptive mind for any eventuality and an unequivocal insistence upon the truth if his work is to have value and he is to have the confidence of the profession and public. He must be well trained in his subject in order to recognize the observed phenomena at their true value and coordinate the findings from which he derives the anatomic diagnosis. Hand in hand with his mental and character qualities he should have skilled technic which enables him to dissect without unnecessary mutilation, and when finished to leave the body in a condition acceptable to undertaker and family. Later the histologic, bacteriologic, and chemical stages of investigation must be skillfully followed through. Skill and taste in preserving gross and microscopic specimens for the museum and photographic or other forms of illustrative records of specimens will greatly enhance the value of his work. In any event a clear, concise and complete record or report is essential in order to render his work and its results intelligible to others and of permanent value. He should have the confidence and command the respect of the profession. If his work is to grow he should encourage the participation in the autopsy of all qualified to be present and as nearly as possible arrange the time and place for the autopsy to suit those interested and intending to be present. With respect to the public his conduct should also inspire respect to the end that it will be easier for the clinician to obtain consent for the autopsy. As we all know hind sight is more accurate than foresight and the wise pathologist will try to put himself in the position of the clinician in cases of errors of diagnosis before allowing himself to indulge in harsh and unkind criticism of the clinician.

He must bear in mind that now and again in spite of the autopsy the cause of death remains a mystery. It is natural for patients in cases of the biopsy and others in cases of the autopsy to appeal directly to the pathologist for information concerning the matter in question. The just and long-headed pathologist will scrupulously have regard for medical ethics in his dealing with the public. Coming in contact with the public less than the clinician and naturally more or less susceptible to the blandishments of the patient or public, the pathologist has the occasion to forsake his field to discuss, prescribe or recommend treatment, discuss or even make a clinical diagnosis. Insofar as he yields to this temptation he is not only unfair and disloyal to the clinician but stands to alienate the clinician from wholehearted support of the specialty of pathology. Finally he is subjecting himself to making errors which are as obvious to the clinician as any errors of the clinician may be to the pathologist, and the results for the patient may be equally as disastrous.

In conclusion the medical profession should awaken to its responsibility to improve the accuracy of the diagnosis as checked by the autopsy. In this spirit and under the guidance of the profession the public should be educated to realize that promptly at death the spirit leaves the body and the autopsy having the useful and beneficent purpose of serving the living is in no wise more mutilating or destructive than cremation or the slower process of decay in spite of embalming. Perhaps if embalming were abolished and the living realized that decay of the body was not only inevitable but rapid, the time element in the relative's appreciation of the prompt dissociation of the spirit from the body could be so altered as to favor more generally the authorizing of the autopsy. Of even greater service the clergy, themselves thoroughly convinced, could be of incalculable influence in educating the public to grant permission for the autopsy or even to request it by insisting upon and stressing the instantaneous flight of the soul from the body at the moment of death leaving the body as John Burroughs<sup>10</sup> has said, no more than a pail or two of turbid fluid, when reduced instantly to its constituent elements.

Finally, it would seem timely and appropriate for the medical profession and the public jointly to cooperate in the general readjustment from the gross mismanagement of human affairs of the past twenty years by appraising progress to date and laying the foundation for further advances along sound lines through the more general use of material constantly at hand for the autopsy.

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### THE RELATION OF THE STATE DEPARTMENT OF HEALTH TO THE PRACTICE OF MEDICINE\*

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Mr. President and Members of the Society: After this unusual comprehensive discourse on hypertension by Doctor Scott, preceded by that interesting demonstration in surgical diagnosis by Doctor Hunt, I feel that a formal paper would be out of place at this time.

My thought this morning was to present some of the activities of the State Department of Health and its effort to correlate them with the practice of medicine. In assuming this office on July first of last year there was the one thought that it might help to serve the interests of organized medicine and at the same time to carry on the prerogatives of public health administration along the lines of progressive medicine.

It is only fitting at this time to express the highest appreciation to our chief executive, Governor Herring, who by official action and personal cooperation has supported and greatly facilitated public health measures, and the medical profession of Iowa is particularly fortunate in having a governor who is so deeply interested in scientific medicine and public welfare. I would be remiss if acknowledgment was not recorded of the heritage of a well organized Department of Health by Iowa's great health commissioner, the late Dr. Henry Albert. It is difficult in any brief outline to present the remarkable changes that have developed in administrative service from that of a generation ago.

There still lingers in the public mind a conception of the health official as a form of police officer whose main duties are the enforcement of rules governing reportable and contagious dis-

eases, as well as the necessary quarantine regulations. The Division of Epidemiology in charge of Dr. Carl F. Jordan, is concerned with the investigation of the occurrence of all infectious diseases in the state, including the course and mode of transmission. The number of epidemics of typhoid fever, involving the carrier problem, the transmission of Rocky Mountain spotted fever by the wood tick, the transmission of virulent sore throat, gastro-enteritis and undulant fever in epidemic form through the medium of public milk supply, have required specially qualified workers for their complete solution.

State venereal control is closely connected with the social welfare of our people and under the supervision of Dr. F. J. Swift, Deputy Commissioner, this service is being constantly extended and accomplishing some notable results.

The maintenance of a pure public water supply and the restriction of stream pollution in our state is assuming increasing importance as a public health activity. Under the direction of Mr. A. H. Wieters, and his four associate sanitary engineers, every instance of stream or lake pollution by public waste is carefully investigated, and the proper measures for abatement of the same are directed by the department. All public water supply and sewage disposal plants must have the approval of the Department of Health before they are established.

The public health interests of Iowa are particularly fortunate in having at all times the active cooperation of the State University of Iowa faculty of medicine and specially that of Dr. M. E. Barnes, professor of preventive medicine, and director of the state hygiene laboratory at Iowa City. The assured accuracy of all laboratory examinations is a valuable factor in connection with epidemiologic and sanitary engineering problems.

The importance of carefully compiled vital statistics in a registered state is evident. Under the direction of Mr. R. L. McLaren, about 40,000 births and 30,000 deaths are collected, properly classified, and a copy of the same transmitted to the United States Department of Commerce.

Public health education is gradually assuming a very important place in extending the knowledge of the benefits of modern scientific medicine to the individual citizen as regards the maintenance of health and the prevention and control of community disease. Through the active cooperation of the councilors, the Committee on Child Health and Protection, and the Speakers Bureau of the State Medical Society, with the State Department of Health, distinct progress has been made in this direction. All literature of this nature sent out by the department is approved by the Committee

\* Presented before the Eighty-third Annual Session, Iowa State Medical Society, Des Moines, May 9, 10, 11, 1934.



on Child Health and Protection. Educational courses of studies, lectures, and group immunizing programs are promoted in conjunction with the particular county medical society concerned. In addition quarterly bulletins on special subjects are issued by the department, as well as weekly health letters submitted to the public press. This division is in charge of Dr. J. H. Kinnaman, who with his associate, Miss Edith S. Countryman, R.N., Director of Public Health Nursing, is extending the gospel of child health and health education to the people of Iowa as never before.

During the past year a new departure has been instituted by Professor Barnes at Iowa City in the form of a course of ten lectures given by five members of the Administrative Staff of the State Health Department on different phases of public health service to the junior class in the College of Medicine.

The Iowa State Department of Health has the additional function of supervision over nine divisions of licensure and registration, medicine and surgery, dentistry, nursing, osteopathy, chiropractic, embalming, optometry, podiatry, cosmetology and barbering. Each division has its separate board of examiners, but the final determination whether the respective candidate has complied with statutory requirements is one of the duties of the Commissioner.

The Division of Inspection and Law Enforcement is in charge of Mr. Herman B. Carlson, an experienced attorney whose duties involve the investigation of violations of the different practice acts and the institution of enforcement procedure.

By coordinating the services of the State Department of Health with the interests of organized medicine in Iowa, it has been possible to accomplish very gratifying results for the welfare of our people, and if we can have your further cooperative support the fullest measure of our purpose will be assured.

CHOLECYSTOGRAPHY

A CLINICAL STUDY OF 1,655 CASES\*

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This article presents a review of our experience with oral and intravenous cholecystography in 1,655 patients over a period of six years. This series was not confined to a group of patients presenting gallbladder symptoms, but the test was carried out in a routine manner on a wide variety of patients, although a majority of them had some type of abdominal distress. The dye (sodium

tetraiodophenolphthalein N.N.R.) is given the evening before, following a small fat free meal, and first and second films are taken the following morning at thirteen and sixteen hours respectively; the third and fourth films are taken one and one-half and two and one-half hours after the fat meal; 732 patients received the dye orally and 923 intravenously.

The entire series has been divided into three groups.

TABLE I

Graham-Cole tests showing good visualization of the gallbladder and without evidence of calculi, occurred in 801 instances out of a total of 1,655 cholecystographic studies. The diagnosis was checked either by operation or postmortem examinations in 88 instances. The results are tabulated as follows:

Condition of Gallbladder	Operative	Post-mortem	Total
Group I—Gallbladder showing gross and microscopic evidence of disease.....	19	1	20
Group II — Gallbladder removed but microscopically normal.....	11	7	18
Group III—Gallbladder grossly normal.....	50	0	50

Of the eighty-eight patients, twenty-two of them gave rather definite stories of gallbladder disease; however, a careful study of the thirty-eight gallbladders removed showed that twenty were of the minimal type of pathology and eighteen were normal. By minimal type we mean little or no evidence of thickening or scarring, with histologically only slight lymphocytic infiltration, slight pseudo-acinous formation, and blunting or adherence of villi.

Perhaps most interesting is the group of twenty cases with normal tests but having pathologic gallbladders. One must inquire into the extent of pathology, whether calculi were present, and finally whether the patient was relieved by cholecystectomy. We are familiar with the questionable clinical importance of a few scattered lymphocytes and slight mucosal alterations as indicating chronic appendicitis. The same applies to the diagnosis of chronic cholecystitis, even though such a diagnosis may be initially consoling to the surgeon. Four or 20 per cent of the above twenty cases had minute calculi, the largest being three millimeters. Four cases or 20 per cent had had previous cholecystostomies with residual minimal pathology. One previously unoperated case with minimal pathology and no stones was relieved by cholecystectomy. The remaining ten patients upon follow-up study have not been relieved of their abdominal complaints and several are worse.

\* From the Departments of Radiology and Surgery, University of Iowa, Iowa City, Iowa.

In summary, although the gross accuracy of a negative Graham-Cole test is 76 per cent, we find after follow up study that only ten per cent had undoubted intrinsic gallbladder pathology. All were minimal in type. Only four per cent of the 88 cases had calculi. We therefore estimated the clinical accuracy of a negative Graham-Cole test as 90 per cent, and this holds true even though definite gallbladder symptoms may be present in the individual case.

TABLE II

Graham-Cole tests showing poor, faint or non-visualizations of the gallbladder, a total of 579, composed of 212 instances of poor or faint visualization and 367 of non-visualization. The diagnosis was checked either by operation or postmortem examination in 222 of these.

Diagnosis at Operation or Postmortem	Poor Vis.	Non.	Total
Cholelithiasis .....	32	109	141
Cholecystitis .....	19	36	55
Carcinoma of gallbladder.....	2	2	4
Normal Gallbladder in combination with			
1. No other diseases found....	1	3	4
2. Duodenal ulcer .....	1	1	2
3. Gastric ulcer .....	1		1
4. Cirrhosis liver .....		1	1
5. Cancer of the pancreas....	1		1
6. Splenomegaly with hemo- lytic icterus .....		2	2
7. Diabetes .....	1	3	4
8. Chronic appendicitis .....	3	2	5
9. Tubercular peritonitis .....		1	1
10. Cancer of the liver.....	1		1
	62	160	222

The percentage of accuracy in this group is 90 per cent.

All but twenty-two of these patients presented rather definite symptoms and histories of gallbladder disease. We found that most of those showing normal gallbladders were lacking a very definite history of cholecystitis or cholelithiasis; therefore, one must conclude that a poor or non-visualization of the gallbladder in conjunction with gallbladder symptoms makes for a high percentage of accuracy; when symptoms are lacking the percentage of accuracy will be considerably lower.

At this point we would like to draw particular attention to the error of the test when used in diabetic patients. It became evident in the course of the study that a very high percentage of diabetic patients were giving a poor or non-visualization of the gallbladder when the examination was made in the routine manner. Four of the patients came to operations or postmortem examinations and the gallbladder was found to be normal. This has led to the routine gallbladder examination of all diabetic patients now being admitted, and while the series is yet too small (81) to draw any conclu-

sions we are impressed by the fact that at the present writing approximately 80 per cent of all diabetic patients routinely examined are either giving a very faint or a non-visualization of the gallbladder. Most of these patients give no history whatsoever of having any symptoms at the present or in the past referable to the right upper quadrant. All of them were uncontrolled diabetic patients and the cholecystographic studies made before the patient was put upon a diabetic regimen. Several patients have been rechecked by giving the dye at 8:00 a. m. and taking films at two hour intervals. Two patients which failed to visualize the gallbladder by the routine method gave a fairly good concentration on both the 2 and 4 hour films.

Those few patients showing a normal gallbladder are usually those having diabetes for a relatively short time. Patients in whom the diabetic condition has been present for longer than a year usually fail to visualize.

At the present writing, we have no explanation to offer and one hesitates to advance any theoretical supposition until a larger series has been carefully studied and adequate tests have been made on liver function, blood sugar content, gastric acidity, etc. It does not seem logical that 80 per cent or more of all diabetic patients should have gallbladder disease *per se*, and we feel that investigation will ultimately disclose the fact that alterations in liver function will probably account for this high percentage of false positive cholecystographic tests.

TABLE III

Graham-Cole tests showing evidence of calculi regardless of the type of visualization, a total of 222 of which 109 came to operation or postmortem examination.

Cholecystographic Diagnosis	Calculi Found at Operation or Postmortem	No Calculi Found at Operation	Percentage of Accuracy
1. Positive shadows .....	29	1	96.6%
2. Negative shadows .....	75	4	94.0%
	104	5	95.7%

The percentage of accuracy in this group is 95.7 per cent.

The errors in this group can be attributed chiefly to errors in technic. The patient in whom a diagnosis of a positive calculus was not substantiated by operation should have had a preliminary film. The four errors in diagnosis of negative calculi were based both upon the misinterpretation of gas in the intestinal tract overlying the gallbladder and poor technic.

In comparing the oral method with the intravenous method we have always felt that the intravenous method has been somewhat more reliable than the oral, but in checking over the num-



ber of errors in each group we find for instance in Group B that 22 errors in diagnosis were made out of a total of 222 or ten per cent. Of this 222, the intravenous method was used 153 times, the oral 69 times; six of the errors occurred in the oral group or a percentage of nine per cent; sixteen errors were made in the intravenous group or a percentage of 11 per cent. In Tables 1 and 2 relatively the same proportion holds. A second point, namely the percentage of reactions, should be mentioned when comparing the two routes. Mild general reactions in the nature of transient chills, urticaria, nausea and vomiting or diarrhea occurred in thirteen per cent of the intravenous administrations. Another twelve per cent had severe reactions similar in type to the above mentioned, or less frequently a sudden circulatory episode with dyspnea, cyanosis and tachycardia, an alarming situation both to physician and patient. The incidence of local inflammatory reaction at the site of injection has been decreased materially by greater care in venesection, dilution, and washing of the dye out of the vein when injection is completed. Since 1931 we have had three cases of persistent cellulitis, none of which required drainage. No cases of thrombophlebitis are recorded.

By the oral route, seven per cent of the cases had general reactions consisting of transient nausea, vomiting or diarrhea and approximately one-fourth the frequency of reactions after intravenous administration. From a comparison of the two methods we have reached the conclusions that the oral method is every bit as reliable as the intravenous and the frequency of reaction is only one-fourth that of the intravenous method.

#### CONCLUSIONS

1. A report of 1,655 cholecystographic studies was presented with operative or postmortem checks in 419 cases.
2. Normal cholecystographic studies show an accuracy of at least 90 per cent or better, regardless of the fact that gallbladder symptoms may be present.
3. Cholecystographic studies with poor or non-visualization show an accuracy of 90 per cent or more when gallbladder symptoms are present. The accuracy, however, will fall below 50 per cent when symptoms are lacking.
4. When diabetes is present 80 per cent will fail to show a normal visualization of the gallbladder by the routine method of cholecystographic study.
5. The oral method of giving the dye is just as reliable as the intravenous method and will produce much less reaction on the part of the patient.

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#### LEAVES FROM A DOCTOR'S NOTEBOOK\*

GEORGE C. ALBRIGHT, M.D., Iowa City

The Iowa Academy of Ophthalmology and Otolaryngology is meeting today under unique conditions. We have as our guests and participants in our program a number of young men, hospital internes and residents, who are looking forward to the day when they shall be scattered over our state, and gather annually with those of our number who still survive, for this yearly conference. Their presence is an honor and a challenge. Broad in training but limited in experience, they are, we trust, hoping for a glimpse of what experience has taught us and may teach them. Burdened by routine, wearied by didactics, nauseated by repetition, or appalled by incurables, no doubt everyone of them at some time has asked himself, "Is this the practice of medicine?"

The fascination of the practice of medicine is its unknown quantity. No matter what your hospital training and experience may be, the first case you may have in your private practice may present an entirely new picture. The physician who makes it an invariable rule to write a history—containing the essentials—of every case that comes into his office will be greatly surprised in the course of a few years to find how many clinical rarities he has met and recorded. A member of this group reported a few years ago, the tenth recorded case in all literature of labyrinthitis following mumps. A general practitioner of our city two years ago reported the fifth recorded case in the world's literature of pregnancy in a patient with Addison's disease. A recent graduate of Iowa in her first year of practice in a town of three hundred, diagnosed and reported the twenty-second case on record of a peptic ulcer in a child under fourteen years of age.

The great majority of patients we have will recover regardless of our treatment. It is the minority who must look to us for aid, and to whom we must look for the fascinating unknown. Unfortunately the rare or unusual and the common follow identical pathways in the early course of their disease. Carefully compiled histories, if kept and

\* Read at the Iowa Academy of Ophthalmology and Otolaryngology, Iowa City, November 22, 1934.

studied, will usually tell where the paths diverge; the one going straight on to complete recovery, the other into a diagnostic maze that will challenge both your innate ability and your acquired training. We readily acknowledge that there is nothing like the postmortem examination to clear up obscure diagnoses, but most patients prefer health without a diagnosis to death with it.

Study your own case histories in connection with your scientific reading. If you have the power of detachment, this will enable you to deepen your clinical acumen, for your successes and your mistakes both tend to the same end. Clinical acumen is nothing but ability to disregard the non-essentials, and to ferret out the essential facts of any case. Diagnosis depends upon clinical insight or theory, and the ability to marshall the facts to substantiate or prove that theory.

For the members of the Academy the foregoing is but "carrying coals to Newcastle." Their professional success bears witness to the fact that this is what they do. Robert Hutchinson has observed, "Throughout the ages we (physicians) have been accused of ignorance, greed for money and of not practicing what we preach." To the first two charges no defense will be attempted here. To the last charge, may I submit as controverting evidence three cases selected from my files kept for the past twenty years?

The first case is that of a white boy, six years of age. He presented the following history: In previous years he had had an otitis media, bilateral, with discharge. He was now ambulatory following measles. Four days before I first saw him, April 21, 1924, the left ear began to ache violently. Next morning there was some discharge, and it was discharging profusely when seen. On April 19, the right ear began to ache, and had ached continuously since. No discharge, but mastoid tenderness. When I saw him there was postauricular edema, right. Temperature 99.4, pulse 130. The white blood count was 24,600. Owing to the immediate history of measles, it was necessary to do the mastoidectomy at the home. A subperiosteal abscess was found, the mastoid cells cleaned out. The dura was exposed in the middle fossa. Myringotomy, both ears. For four days the course was fairly satisfactory. Then the child vomited, rather expulsively. There was no tenderness over the internal jugular. The fundi were negative. Temperature 101.5, white blood count, 22,250. Reflexes normal. The left ear was negative except for otorrhea.

On the seventh postoperative day there was some nausea. Urinalysis showed two plus albumin with numerous pus cells. Was there a pyelitis? By the eighth day the white blood count had

dropped to 10,750. His general condition was improved. Urinalysis and fundi were the same as the day before. Some nausea and vomiting, but not projectile. There was no diplopia, reflexes seemed normal. Seen by consultant. On the ninth day, morning temperature 98, evening 104. Some rigidity of the neck. Fundi were negative.

On the tenth day there was pain in the right foot and leg. Meningeal symptoms continued. Temperature continued septic. The left ear was discharging profusely. No mastoid tenderness. We were now able to move the child to the hospital. With the exposed dura, right, the discharging ear, left, the meningeal symptoms, and with the possibility of a thrombophlebitis always present, it was decided to place the child under general anesthesia, do a lumbar puncture and cell count to verify or exclude frank meningitis. If the meningitis were not present, we would clean out the left mastoid. The lumbar puncture showed slight pressure, only thirty cells, and these mostly lymphocytes. The left mastoid was therefore cleaned out and found to be involved throughout. Cultures from the spinal fluid showed streptococci and gram positive cocci.

For the next seven days the course was quite satisfactory. Then the patient developed an acute arthritic ankle, right. Temperature 104, white blood count 19,000. Fundi negative. Next day the temperature typically septic. From now on recovery was fairly rapid and consistent. During his stay in the hospital, the patient's mental state underwent quite a marked change. Whereas, early he had been bright, cheerful, and cooperative, he became sleepy, very irritable, and hard to manage. Dixon's observation occurred to us during these days. "When a patient's disposition changes markedly without evident cause following a mastoidectomy, always think of the possibility of brain abscess." On May 20, he left the hospital in good condition. Both canals dry. Patient was eating well, and gaining weight.

On May 27, five weeks after the first mastoidectomy, he complained of a little headache. His mother noted also that he would start to ask a question and then seem unable to complete it. I saw him at noon, finding the temperature normal, pulse 100. The boy was apprehensive and anxious. Reflexes normal. Fundi normal. Since he had been out-of-doors in the bright sunlight, we thought the headache might have been due to that fact. At four o'clock the mother called, asking me to come at once. The child had been asleep and a few minutes before had awakened with marked spasmodic contractions of the right face, right arm, forearm, hand and the lower jaw. He was unable to talk, babbling and frothing at the



mouth. There was a suggestion of ankle clonus. Seen by two consultants. The concensus of opinion was that there had been an embolism, probably in the internal capsule. He was given a sedative. Four hours later the twitching had ceased and urinalysis proved negative. The next morning there was complete flaccid paralysis of the right side. The right face was paretic. The tongue protruded to the right. Child unable to talk, except to mumble assent or dissent. Mentality seemed fairly clear. He was seen by a neurologist on May 31, four days after his attack. The findings were anomalous. A Babinski was found on the left or unaffected side. Reflexes were all gone on the right. The neurologist felt that there was an encephalitis with septic softening of the motor area supplying the right side.

On June 6, the mother noticed the boy move his right arm and leg in his sleep. By June 10 the speech was beginning to clear up quite rapidly. The face was recovering motion, and there was slight voluntary movement of the right upper, especially grasping. Progress was slow but continuous. Late in the month there was a homonymous diplopia, which persisted for a week, then disappeared.

Of interest, though of no importance, was the fact that during June at the behest of solicitous friends, a chiropractor was called. He assumed all credit for the recovery, which was eventually complete. At the present time function of arm, leg, face, his speech, and his mentality seem perfectly normal.

Here is a bilateral mastoiditis, meningismus, with organisms recovered from the spinal fluid, a total hemiparesis, probably embolic in origin, with complete recovery. The absorption of the embolus, and the complete recovery of muscular function of the right side is an excellent example of what nature will do if left alone.

The next case is a married woman, twenty-six years of age. On March 2, 1927, she came in with a cold of four days' duration. She was rather subject to head colds, otherwise her history was negative. The pertinent facts of the examination were an acute infection of the nasal mucosa, and a slight clouding of the left antrum. The cold was treated and usual directions given for care at home, with instructions to report the next day. This she did, much improved. On March 7, four days later, there was marked tenderness over both antra. Temperature 99.4, pulse 132. Transillumination showed the antra dark. Irrigation brought much pus from the left, less from the right, the return flow being impeded. Antro-meatal, each side, was advised and refused. A nurse was put on the case. She had three rather stormy days,

both physically and mentally, the nurse reporting care possible only under protest. On March 12, she had a severe bilateral earache. The drums were bulging, but she refused to allow myringotomy. The temperature ranged from normal to 101, the white blood count to 15,000. Local treatment of the nose, and the usual forcing of rest, fluids and elimination were employed. For three days the advice to have antral drainage was given, and refused. On March 14, Dr. Rohner saw the patient and concurred in the treatment recommended—all to no avail. At 8:30 p. m., with bulging ear drums, bilateral mastoid tenderness, soreness over the maxillary sinuses, and gradual increase of unfavorable general symptoms, the patient finally accepted the advice to enter the hospital for drainage of the antra, and for myringotomies. Her white blood count was now 25,800, with 86 per cent polymorphonuclears.

Relief from pain was received from these procedures, and for five days progress was very satisfactory. On March 20, the white blood count rose to 22,000 with 80 per cent polymorphonuclears. X-rays of the mastoids showed bilateral involvement. By this time, the patient was ready to accept advice, and on March 21 a bilateral mastoidectomy was done. Immediate recovery was good. Four days later the temperature rose, and the patient reported pain in the ankles, knees, elbows and fingers. Examination showed redness and swelling of these joints, but nature was kind. With local heat and administration of salicylates, pain in the joints promptly subsided; in four or five days all symptoms were gone. The canals were dry the second day. The mastoid wounds healed by first intention, and the patient left the hospital April 2, twenty days after admission, twelve days after her bilateral mastoidectomy.

This patient had a common cold, a bilateral maxillary sinusitis, a bilateral mastoiditis, with definite arthritis following, from all of which through a kindly nature, she recovered promptly. During the year 1933, she had a recurrence of sinus trouble, consulted a general practitioner, was cared for by him, developed a bacterial endocarditis and died.

The third case is a woman, forty-two years of age. On February 7, 1931, she came in with a cold of one week's duration. Examination showed temperature 97.4, pulse 84; and pus in both sides of the nose. Transillumination, both antra dark, though no tenderness. Treatments for cold both at the office and at home were given on February 7 and 8. On February 9 I was called to the home and found the patient with a temperature of 102, with severe pain and marked tenderness over the right maxillary sinus. Ice and sedatives were

tried. At 4:30 a. m. on February 10, the patient fainted and vomited. When seen at 5:00 a. m., the temperature was 102, pulse 108. Advised immediate removal to the hospital. This was done, and x-rays showed the right antrum to be full of pus. An antro-meatal was done at once under gas anesthesia. Patient now had one uneventful day, except for minor discomforts. On February 11, she developed an otitis media, right. A myringotomy was done. At 2:00 a. m. on the next day the left ear began to ache. At 8:00 a. m. another myringotomy was done. Culture taken from the middle ear yielded streptococcus hemolyticus. Daily blood counts ranged from 11,000 on entry, to 18,500 on February 13, with 71 to 89 per cent polymorphonuclears. On February 14, the patient had a chill and the temperature rose to 105.2. Seen by Dr. Rohner in consultation, who found only a small area of pneumonia. Blood culture taken, which was reported on February 15 as being positive, for streptococcus hemolyticus. In spite of the blood culture, however, the general condition of the patient improved. For ten days there was very slow definite improvement, though the patient was still gravely ill. During this time, several myringotomies were done. X-rays of the mastoids, taken on February 22, showed definite involvement of both mastoids, which were of the densely sclerotic type. With a chill on February 24 and the continued aural discharge, a double mastoidectomy was decided upon. This was done under gas anesthesia, Dr. Boiler assisting. The cortex was extremely hard. The mastoid cells were practically obliterated, but each mastoid antrum had pus and degenerated mucosa. Neither dura, sinuses, nor facial were exposed nor irritated, and the patient was returned to bed in a satisfactory condition. From February 25 to March 5, the patient made a slow up-hill fight. From then on, the progress became much more satisfactory and on March 15, the patient left the hospital. Final recovery was uneventful, except for being rather tedious.

In this case, the patient had a cold, an acute maxillary sinusitis, an antro-meatal, then a bilateral mastoiditis, due to streptococcus hemolyticus, with a positive blood culture of the same organism and eventual perfect recovery.

I present these three cases to you as proof of the statement, "the fascination of the practice of medicine is its uncertainty." Twenty years have brought many patients with acute mastoiditis, but only one with a hemiparesis following operation. The marked change in the patient's mental state may have marked his point of departure from the usual course. In twenty years I have seen hundreds of patients with common colds, certainly a

hundred with infections of the maxillary sinus. To all outward appearances, in the beginning, these two patients were no different from the many other patients coming into the office. One can only surmise what factors may have entered into these two patients that their courses were so different from the other hundred. Daily progress notes, reviewed, show where they left the usual course, to develop into the unusual. With histories of every case, the best laboratory for every man should be his own successes, and his own failures. Given time and with such study we may all hope for a larger measure of success, as a result of our efforts, but never should we fail to exemplify the humility of Paré who said, "I dressed him, God cured him."

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### OLD AGE\*

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At the very zenith of man's power, at the harvest time of his creative possibilities, his desires and ambitions, the life drama portrayed by each human actor discloses, abruptly and often entirely unexpectedly, its true tragic motive. It is as if the player has been interpreting a rôle, whose course and ultimate end were beyond his comprehension. It began as a joyous experiment full of possibilities, ambitions, and a vital desire to achieve. The bubbling spirits of youth carried him through the first act. The will power and judgment of manhood eased him well into the second act with a sense of security; but he is suddenly startled by a sharp hint from the prompter's box that the interpretation of his rôle must be changed into another key—one less pleasant, more difficult and unsatisfying. From now on to the end of the third act he must portray the picture of a gradually, but surely flagging desire and failing powers, of disillusion, waning pleasures, and a progressing fatigue—in other words, the portrayal of senescence until his rôle is curtailed by death.

The title of this thrilling tragedy is "Mortal Man" in three acts; first, evolution; second, maturity; and third, involution. It is the complex story of a viable multicellular organism, a chemico-physical factory capable of producing and storing energy, of repairing its own intricate mechanism with certain bounds, and of reproducing its kind. There is, however, a time limit to its activity. Mortal it is, in its own individualism, but it secures a potential immortality for its own kind, at the price of its own self-destruction. It is a peculiar quirk of the human mind, that leads us all to ignore or to show an avowed aversion to

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the acceptance of old age and death as natural physiologic processes. During the first two acts our rôle is enacted as if we were immortal, and there were no fixed time limits to which we must inevitably submit.

We become aggravated when a discussion of the problems of age are brought forth and seek to discourage this phase of life. We deny it as a normal process, and attempt to conceal anything which pertains to it. Since man left the Garden of Eden, this fear of age and death has been an intrinsic defensive mechanism. Normal physiologic processes of a scientific nature should not depress us, yet they do, and during our exceedingly rapid manner of living we have not evaluated or considered a normal philosophy of life to sweeten the approach of age. The general trend of civilization has been to look on old age with disfavor, yet since biblical times now and then a voice is raised in its defense as a normal phase of life. Aristotle was bitter against it; Plato and Cicero spoke in its favor; Roger Bacon tolerated it; and Shakespeare used it in ribald jest in "As You Like It." Death as an entity was kept in the foreground for centuries as the ultimate end of life progression. The idea was promulgated by the church and the never ending wars and plagues, until the human mind popularized death both in literature and art. With scientific advancement, it was hard for the individual to throw aside inherited religious fears and adjust his philosophy of life to one of factual concepts which give promise of peace and contentment. Man has always been prone to base his philosophy upon the individual rather than the species to which he was biologically bound. Age and death are evolutionary features which work for the benefit of the species and can only be altered by vast expanses of time. To hunt for the fountain of youth was a biologic desire of aging men until all frontiers were mapped, then science came to the rescue with a physiologic rejuvenescence which has only confused his judgment and left him in a quandry. He was seeking a way to defeat the species, instead of growing old gracefully as an individual.

What is the human machine? Where does it begin? What are its capabilities? Where does it end? We need only say that it is a physiochemical machine capable of producing individual energy—the viable animal organism. So long as this organism can take in fuel, transform this fuel to the production, the storage, and the release of energy, we say it is alive. When it ceases to perform these functions, we speak of death. The charge of this machine begins with the union of the sperm and the ovum. The charge once

initiated is constantly decreasing during growth until maturity is attained, then it declines still more rapidly until a standstill is reached. A normal biologic death is the result of the loss of this machine intrinsic energy. The period to which this machine has been active, is its biologic life limit. The essential limit of this period is then quite naturally the period preceding puberty, the procreative period and lastly that period to which the progeny must be cared for. This life limit is a germ plasm factor, inherent to the race. Man is born to die. Death occurs in order that he may grow. The whole period of growth up to maturity, the progress of the individual life consists of an interlocking of growth processes and involution processes, all of which are necessary to complete development.

The most important of the minor involutions begins even prior to the start of this human energy machine. In the maturing ova, three polar bodies are non-functionable and die in order that the fourth may have the required number of chromosomes for the species and be freely supplied with nutritive material if a fertilization takes place. If it does, then again half of the chromosomes are extruded that the whole may be stronger. This loss of polar bodies, chromosomal substance, enormous number of wasted sperm cells, and the tail of the fertilizing sperm look like wasted extravagance on the part of nature—they fulfill their lives and die. Death and life are closely bound from the very conception of this energy machine. As growth continues with astounding rapidity, age keeps pace and when the part ceases to function involution or death occurs. We may mention the branchial clefts, the yolk stalk, thyroglossal duct, wolffian duct, pronephros and others, all of which appear at certain times, persist for a time, then disappear wholly or in part. The placenta, the intermediate organ of nutrition between mother and child, is remarkable in its history. When the child is ready to maintain its entity this structure is senile. We can demonstrate in it, all the pathologic processes found later in the major organ involutions, sclerosis of its vessels, fibrosis of stroma, atrophy of villi, thrombosis and infarction. Its work is over, age is upon it, and it disappears from the rôle of the individual, but in it is the prophecy of future fate.

Each of us is a fatalist when it comes to accepting localized organ involutions and developmental tissue involutions. We expect them, look upon them as a normal process, and attach no fear or regrets to them; but how entirely different, how apprehensive, how fearful are we, when the manifestation of a major organ involution affects the

organism as a unity. The essential difference between a minor and major involution is that of degree and purpose and the organ or tissue involved. Minor involutions affect structures which are more or less temporary in function, and as soon as this function is fulfilled they are disposed of without damage to any of the vital tissues. Major involutions affect all of the vital structures, not for any future growth reasons but rather to eliminate the organism as a whole. To be concise, man has fulfilled his part and now stands in the way of progressive specie evolution. Minor involutions occur for the precise benefit to the individual, major disturbances for the betterment of the species. We hate to admit that the peak of life is approaching and consider senescence as a table joke. A true test of character is needed to decide whether we shall meet it with an equanimity of mind and heart or in regretful sorrow.

Perhaps it would be easier instead of designating a dead line of old age, to ask what constitutes old age? Some of us may be wise, others not; some wealthy, others poor; some be talented, others not; but we all get old. Age steals on us as softly as the approaching night, unperceived and unannounced until all at once the unwelcome guest is established. Our various organs do not cease their functions with a uniform degree. When these involutions are advanced so as to be recognized clinically, then "age is upon us." Functional organ retrogression is initiated independently of each other, yet the decreased function of one system soon brings about retrogressive changes in another. Senescence is the result of these retrogressions; old age the resulting complex, and to the internist a man is as old as his arteries, to a surgeon as old as his kidneys. It is not necessary to discuss here the functional changes of senescence, as they are familiar to all of you with their skeletal changes, loss of lymphoid structure, digestive disturbances, sluggish circulation, irritated urinary tract, decreased sexual desire, failing vision, etc. If we sum up these functional disturbances and group them as they appear, in the ordinary male they are, presbyopia, sexual neurasthenia and a chronic fatigue. The one time powerful and virile male recognizes them rather grudgingly and the oft repeated dressing room phase is "I'm not what I used to be." Where he once was vigorous in his sports he now takes up a lesser one in order to conserve his energy. Golf is his shield at this period, and participation in this sport can be counted as an early sign of senescence.

The cause of life is agreed upon by all biologists, yet the effect of age upon the organism is still open to argumentation. Each life has its normal limits, its immortality is only carried by

germ plasm which is renewed from generation to generation. To Metchnikoff the aging process was due to intestinal putrefaction, Brown Sequard could only see sclerotic change, Sir Victor Horsley laid age to ductless glands. These investigators were considering age as a disease process instead of involutionary changes inherent to the organism. Weisman was the first biologist to consider biologic death as intrinsic. Minot followed soon afterward with his loss of energy theory which dovetailed with Weisman's intrinsic theory. Loeb recognized the chemistry of the cell and Carrell sought to interpret senility on the accumulation of metabolic poisons. Most views at present can be summated into one factor—a loss of growth energy.

When is age upon us? When do we disclose our uselessness? None of us present have the temerity to hazard a statement.

"The days of our years are three score and ten." "Youth must be served." "Men are useless at sixty." "His age is against him." Such utterings have been handed to us since the Psalmist with more or less regularity until to many they have become aphorisms ripened by the lapse of time. To grow old gracefully is an art—one which is hard to acquire, especially when we are likely to remark that the old should make way for the young. The pleasing fact to the aged is, that history is teeming with patriarchal achievements that have brought joy, contentment and courage to youth. Moses was hoary when he led Israel's children from bondage; Dandolo, blind and past ninety, stormed Constantinople; in the Doge Palace at Venice hangs one of Titian's masterpieces painted in his one hundredth year; Gladstone, one of England's greatest prime ministers, was elected at sixty years of age, and was still serving at eighty-two; Goethe's best poems were written after he was seventy-five years of age; as was the best literary work of S. Weir Mitchell; Herbert Spencer was active until his death at the age of eighty-three; Darwin's theory of the descent of man appeared when he was sixty-two; Dr. Jacobi was still actively engaged at eighty-six; Elihu Root was sent to Russia at the age of seventy-two; Edison, at eighty, was still in the laboratory, and only the past month we awaited with deep respect an opinion of that galaxy of brilliant minds, all past seventy, our own United States Supreme Court.

The conquering spirit of these aged persons rests in their ability to keep "hitting the ball." We all know aged people who are alive today because they have been continuously occupied. Many of these hoary men are storehouses of knowledge gained by decades of experience. A man may



possess an abundance of knowledge, but only age brings wisdom. A young lawyer seeks an older one for advice, and a young physician is better poised when the bedside is graced by an older colleague. Each profit by the presence of the other, and it is stupidity to say that the aged must step aside for the young. Advice and activity, experience and energy; age and youth, mix well and make the world what it is.

Is there anything within the province of man that we can do to avoid old age? Can we retard it or escape from it? It is a surety from birth, with as much inevitability as the course of the sun through the heavens. Some escape it by a premature pathologic death, but it calmly awaits for those who reach their biologic time limit. More or less charlatanism has sprung to the foreground during the last two decades in the form of rejuvenation of these wornout energy machines. The spirit is willing but the flesh is weak. Rejuvenation of these senile individuals is unwarranted foolishness and only smirks of pseudo-scientific measures drawn from the old laboratory. Modern medicine, through preventive measures has increased the time limit, and in so doing has led more people to reach the biologic limit. Has this accomplished anything worthwhile? We only increase the number of aged people, both fit and unfit, in the upper decades. This adds to the economic difficulties, for these senescent ones must be cared for. It is quite true that the aged are neglected both privately and publicly. There is an abundance of sympathy, but very little application of it. Social relationship, esthetic sense, family relationships, all enter into the picture. The aged are non-productive whereas the child has a productive future ahead. Philosophers of all ages have extolled the beauties of old age, but have you ever read of the beauty of the aged themselves? If one speaks from a sense of beauty, the aged are more or less disagreeable, even repulsive, irritating, peevish and selfish. Interest and sympathy are rapidly overcome and the responsibility shifted. Does the world gain a positive factor by increasing the number of dependents? Is the race better for it? I have yet to find proof of this in the literature.

Do not think I am decrying the condition of the aged, or attempting to influence their demise as many tribal customs permit. Old age is more beautiful than we think. To quote Henry Ward Beecher "I know of nothing made sour by the frost except man." They sometimes are. October should be the ripest month of the year and the richest in color, if the type of old age is what it should be. To grow old peacefully is a great art. To sleep without worry and forget difficul-

ties is a bonded asset. There is nothing to do about age, except to meet it with common sense and courage; to provide the younger with a recompense from experience and observation; to develop certain hobbies and devote oneself to them. Diversity of interest is a spring tonic for the mental processes. Happy is he who can maintain an equanimity between his physical being and his psychic desires, who can approach the end with a normal rate of involution and be free of the taint of second childhood.

I freely admit it is depressing to listen to the narrative of the aging individual, the gathering clouds darken the mightiest of rays and only a shadow is seen, but into that oblivion man's spirit throws a brilliant beam for: "If it be life that waits we shall live forever unconquered; if death, then we shall die at last, strong in our pride and free." Age is the crowning achievement of the living organism, the goal of a purposeful intent. It must not be met with vindictiveness, or a spirit of sacrifice, but calmly and with a knowledge that we have fulfilled our function and can agree with Browning in saying:

"Grow old along with me!

The best is yet to be,

The last of life, for which the first was made:

Our times are in His hand

Who saith 'a whole I planned,

Youth shows but half; trust God: see all, nor  
be afraid!'"

#### SPINAL ANESTHESIA\*

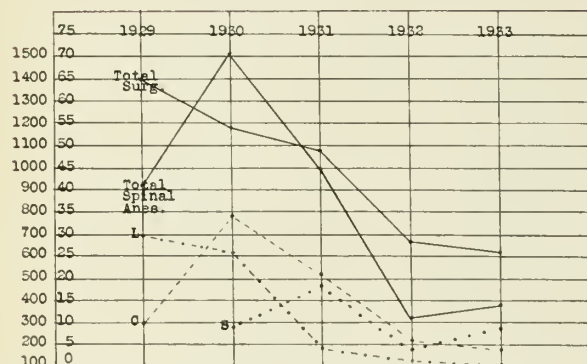
PAUL A. WHITE, M.D., F.A.C.S., Davenport

Opinions regarding the value and safety of spinal anesthesia vary widely. Many of these opinions are asserted on an emotional basis rather than arising from predetermined fact and experience. Foss<sup>2</sup> has pointed out that proper evaluation of spinal anesthesia is difficult because strongly opinionated authors support or condemn it in exaggerated fashion, covering up the hazards and untoward results on the one hand, or emphasizing an occasional mishap all out of proportion to its real importance, on the other. The true status and limitations of the usefulness of spinal anesthesia have gradually evolved from the clinical and experimental experience of the past five or six years, and it is toward this middle ground of sane consideration that we will attempt to guide this discussion.

Coca leaves were discovered in 1859, and the analgesic properties of cocaine were shown by Schraff in 1862.<sup>9</sup> Its use in surgery began in 1884.

\* Presented before the Eighty-third Annual Session, Iowa State Medical Society, Des Moines, May 9, 10, 11, 1934.

CHART I



Number of cases operated upon under spinal anesthesia each year in St. Luke's Hospital, Davenport, Iowa.  
Total cases, and services of three different surgeons.

Corning in 1885 published a paper on spinal anesthesia following laminectomy and regarded the solution as deposited in the region of the cord. Spinal puncture and removal of spinal fluid was demonstrated by Quincke in 1891 and opened the way for experimental work in this field. Sicard in 1898 reported the toxic effects of cocaine in the subarachnoid space, and Bier showed the feasibility of spinal anesthesia with cocaine in 1899. In America, Tait and Coglieri performed an osteotomy of the tibia on October 26, 1899, and Matas operated upon hemorrhoids on December 10, 1899, using one per cent cocaine between the fourth and fifth lumbar vertebrae. Reckless use and bad results gave it ill repute, and spinal anesthesia was largely abandoned in Europe and America. Stovaine was introduced in the early part of the century followed by eucain, novocaine, and tropocaine, but the fear engendered by the disasters from the use of cocaine and stovaine remained, and spinal anesthesia made very little progress abroad or in this country until 1928, except for a revival during the war.<sup>3</sup> Articles appearing from 1906 to 1928 were mostly clinical reports with few experimental studies. Recently more experimental work has been done in an attempt to put spinal anesthesia on a more rational basis.

In 1928 Pitkin, a master technician and super-salesman, introduced "controllable spinal anesthesia" involving the use of solutions lighter or heavier than cerebrospinal fluid. Other authors soon joined in the general stimulation and the use of spinal anesthesia became widespread. With this universal extension of the method came a feeling of unwarranted surety and even recklessness, as tyros and novices plunged into its use indiscriminately, urged on by glowing clinical reports and advocacy of its use even in surgery of the head, neck and thorax. The fact that relatively very few accidents and disasters occurred in any community even during the height of this extensive

use of spinal anesthesia in all sorts of hands, with slight discrimination, under greatly diverse circumstances, speaks more strongly for its comparative safety than many reports of low mortality and morbidity in many thousands of cases operated upon by the most expert in this field.

One of the surprising features in the replies of 106 surgeons in the United States, Canada, and foreign countries to a questionnaire sent them regarding spinal anesthesia, was the paucity of accidents, deaths, or early, or late untoward sequelae in their own hands or in their communities that were attributed to spinal anesthesia. Rather than numbers, there were usually one or two instances of serious collapse of the patient on the operating table, or even death, that struck terror to all concerned and stood out prominently in the mind of the correspondent. It should be remembered that sudden, unexpected and often inexplicable accidents, and even deaths, occur on the operating table, or later, when other forms of anesthesia, including ether, are used. In a series of 2,000 patients operated upon under spinal anesthesia as compared with 2,000 patients operated upon under ether, Foss had only one death on the table during the use of the former method, and ten under ether. In fairness it should be said, however, after considering the desperate condition of the ten who died under ether anesthesia, that the results would have been the same with any other anesthetic, including spinal. He found the number who died later, but while in the hospital, practically the same under spinal and ether anesthesia with the advantage in favor of spinal. The occurrence of minor accidents and an occasional death had the effect, however, of dampening much of the untutored ardor for spinal anesthesia and

CHART II

100 Consecutive Operations Under Spinal Anesthesia		
Appendectomies .....		25
Operations on gallbladder and ducts.....		6
Operations on kidney, bladder, prostate and genitalia .....		17
Operations in pelvis (uterus, tubes, ovaries, cervix, perineum) .....		28
Operations on stomach and intestines.....		10
Adynamic Ileus .....		1
Sex .....	Ages .....	
Males 56 .....	18 to 40.....	48
Females 44 .....	41 to 60.....	35
	61 to 79.....	17

## Dosage:

Novocaine crystals dissolved in 2½ c.c. to 4 c.c. of spinal fluid.

300 mg. ....	14
240 to 270 mg.....	26
100 to 200 mg.....	53
50 to 80 mg.....	7

## Multiple Operations:

One patient, three times

One patient, two times.

Failure to make spinal puncture once.



## CHART III

## Postoperative Complications in 100 Operations Under Spinal Anesthesia

1. Deaths .....	3
1. Fourth day—Ileocolostomy (palliative) for obstructive carcinoma of ascending colon. (Asthenia, cachexia, myocarditis, emphysema) 250 mg. novocaine in 3 c.c. spinal fluid.	
2. Eleventh day—Release of bowel from old postoperative adhesions. (Late bowel obstruction, peritonitis, secondary bowel obstruction.) 300 mg. novocaine in 3 c.c. spinal fluid.	
3. One-half hour—Abdominal drainage for suppurative perforating appendicitis. (Generalized peritonitis of one week's duration) 300 mg. novocaine in 4 c.c. spinal fluid.	
2. Marked collapse during operation, with recovery 5	
Appendectomies .....	3
150 mg. novocaine in 3 c.c. spinal fluid.	
Hysterectomies .....	2
300 mg. novocaine in 3 c.c. spinal fluid.	
3. Disturbing symptoms during operation. (Weakness, faintness, nausea, vomiting, nervousness.) Adrenalin given hypodermically.....	26
4. Prolonged gaseous distention (all pelvic operations) .....	5
Pulmonary atelectasis (suppurative, appendicitis, peritonitis) .....	1
Severe headache .....	3
Delayed sequelae, paralytic or irritative in nature .....	0

in many quarters it is no longer used. A great many others who had never used it before 1928 have continued its use conservatively.

The risks of spinal anesthesia, the contraindications, and postoperative sequelae have all been reiterated in the literature and by spoken word so much that repetition seems superfluous. There is no avoiding agreement with Walsh<sup>8</sup> who considers spinal anesthesia a procedure possessing many pitfalls, and depending for its favorable outcome on the skill and good judgment of the anesthetist. Many of these correspondents showed large series of cases with very little disturbance.

Spinal anesthesia should be avoided in the presence of diseases which affect the spinal cord, as tumors, syphilis, epilepsy, hemorrhage, pernicious anemia, or subacute combined degeneration.<sup>7</sup> Subsequent inevitable developments here from the disease naturally would be blamed on spinal anesthesia. Extreme hypertension or hypotension add to the risk, though many surgeons wrote that they paid little attention to this factor and had no bad results. Conditions of shock, extreme sepsis, and the weak and aged greatly increase the risk. They also increase the risk of other forms of anesthesia. The fear of later effects such as peripheral neuritis, paralysis, and even insanity following spinal anesthesia<sup>5</sup> has loomed large in the public mind, and also that of a large sector of the medical profession. No doubt some of these effects have occurred but the relative number must be exceed-

ingly small. Tovell<sup>7</sup> observed no motor paralysis in 7,000 cases. Foss reports no neuritis or sensory or motor disturbances in over 3,000 cases. Babcock<sup>1</sup> doubts the occurrence of delayed spinal degeneration and paralysis after 12,000 or more operations under spinal anesthesia. One of his patients had eleven spinal inductions.

Undoubtedly some important unfavorable aspects of spinal anesthesia, for the ordinary surgeon, are the necessity of devoting considerable attention to the patient's progress and condition while operating, the wearing off of the anesthetic before the operation is completed, and the not infrequent occurrence of varying degrees of collapse on the table which must be watched for and combated. Many surgeons feel that if supplemental inhalation anesthesia must be used, it may as well be the choice in the beginning.

The favorable aspects are ease of induction, good muscular relaxation, technical facility, fewer packs, less trauma, better vision, and easier closure of the wound.<sup>4</sup> Much has been said about the lessening of the postoperative complications and pneumonias. In our own experience we were not impressed that there was a great deal of difference between spinal and general anesthesia in this respect. The patient with spinal anesthesia is more acutely conscious of his pain and anyone who has a major operation inevitably has a certain degree of prostration and illness. The reports of ability to assimilate considerable food very soon after operation, and of the bright and happy mental attitudes of the patients following spinal anesthesia, were not confirmed in our experience in many instances.

The avoidance of accidents and disasters, as Sise<sup>6</sup> has pointed out, resolves itself into the proper selection of cases, administration of fluids preoperatively, and the use of ephedrine before administering the anesthetic. The amount of anesthetic used should be the smallest dose suitable to the operation. The Trendelenberg position should be maintained. Early action is imperative if collapse is at all imminent. Adrenalin should be

## CHART IV

## Personal Reports from 106 Surgeons (Fellows of the American College of Surgeons) in the United States, Canada, and Foreign Countries

Personal use of spinal anesthesia.				
Expanded .....	48	Contracted .....	58	
Community use of spinal anesthesia.				
Expanded .....	44	Contracted ..	62	
No opposition .....	51	Opposition felt .....	55	
No accidents or deaths .....	65	Accidents and deaths .....	41	
Percentage of work done under spinal anesthesia.				
None	1-25%	25-50%	50-75%	75% Plus
11	44	24	16	11
Height of operative procedures:				
Below the diaphragm only .....				105
Above the diaphragm.....				1

given, saline administered intravenously, carbon dioxide-oxygen inhalation resorted to, and if necessary, cardiac massage. Nearly all of the surgeons replying to our questionnaire had a few disturbing experiences of a minor or major character. The really impressive features of their reports, however, were how few the accidents and disasters had been. All but one do no operations above the diaphragm under spinal anesthesia, and many do only lower abdominal operations or those on the lower extremities. The tone of every letter is that of conservatism and declaration for safety.

Personal experience, the review of many articles and correspondence from 106 surgeons in the United States, Canada, and foreign countries, dictate these conclusions:

1. A considerable wave of unbridled and largely untutored enthusiasm for spinal anesthesia has swept over our country during the past five or six years. Its recession is almost complete and this method has attained a stabilized and useful place in surgical procedures.

2. Spinal anesthesia in properly selected cases, skillfully given, in moderate dosage, with equipment and experience at hand to meet emergencies, is probably as safe as any other available anesthetic today.

3. In the hands of the unskilled and inexperienced, its use is fraught with dangers not inherent in some other forms of anesthesia and these should be preferred.

4. Complete relaxation, good vision, technical facility, less trauma and ease of abdominal closure are often remarkable accompaniments of this method. Necessity for close observation of the patient's condition, readiness to combat emergencies, the frequent occurrence of nausea and vomiting, anesthesia wearing off before completion of the operation, and the not infrequent occurrence of collapse of varying degrees mar the otherwise perfect picture of spinal anesthesia.

5. Patients are more acutely conscious of pain, have varying degrees of prostration, and in general have a course of convalescence after spinal anesthesia similar to that following other methods.

6. The dangers of spinal cord injury, subsequent neuritis, paralysis or other forms of late complications, are probably very slight. These incidents, however, are very impressive when they do occur.

7. Patients in shock, exsanguinated, extremely septic, weak, debilitated or aged, should not receive spinal anesthesia. It should be avoided when any disease of the cord is present that will likely progress, for late effects will be blamed on spinal anesthesia. Extremes of blood pressure add to the risk.

8. One hundred six members of the American College of Surgeons in the United States, Canada, and foreign countries wrote personal communications which largely crystalized the opinions and conclusions expressed here. Many of these were based on large experience, all were thoughtfully and scientifically expressed and make a valuable addition to the subject of spinal anesthesia.

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#### DIET IN THE TREATMENT OF DIABETES\*

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This paper is to be a practical discussion of the dietary management of diabetes. I shall try to discuss some of the more practical features in the development of management of the diabetic patient by diet, and give a few suggestions as to the management of cases by physicians whose practice is such that they see but few of these cases in the course of a year and hence are not familiar with methods for calculating diets. To begin with let us make the general statement that in the past fifteen years although there have been some changes in the ratios of various foodstuffs for the diabetic patient there have been no new and startling developments such as were seen in the early nineteen-twenties, and what progress has been made since then has been that of increasing familiarity with the knowledge produced at that time.

There are certain essentials of the diabetic diet which are worth restating. The more important of these may almost be expressed as axioms.

1. The diet should contain sufficient calories to allow the patient to maintain his economic position in society.

2. The diet should be balanced so that acidosis does not result, and that nitrogen balance should be maintained.

3. There should be sufficient minerals and vitamins to prevent any deficiency.

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4. In children extra calories must be allowed for growth.

If we can maintain the patient on a diet which will satisfy these requirements then we may expect the patient to do well. Some explanation of these truisms should be made.

We feel that the diabetic patient is not being properly controlled unless he is able to continue in his regular work, and that the preparation and use of the diet must not upset him in his daily routine or in his mental attitude toward life in general. This means that the food must be easy to prepare, good to eat, and not so different in form from that which the people around him, and with whom he must associate, eat. With these requirements in mind we try to keep our patients on measured rather than weighed diets. It would seem that those diets which are prepared with the use of spoons, cups or even "servings" of food, would present some valuable features. It is obviously much easier to arrange a diet using this method. The patient feels much less conspicuous at his own table, or in public places, and even at home if he is not punished by the indignity of having his meal set aside for him in small dishes so that not only he, but others are reminded of his disease. Mosenthal states: "Many physicians, nurses and patients are openly scornful of the use of qualitative as opposed to quantitative, i. e., weighed diets. Patients with this point of view can be accommodated without distressing or inconveniencing any one except themselves; but the physicians and nurses who insist on accurately weighed and meticulously calculated diets for all cases may spread discontent, and tend to impose an unnecessary burden on many already afflicted with a permanent handicap. Weighed diets are undoubtedly necessary for the satisfactory control of many cases of diabetes, but eating by grams should be avoided whenever possible, since the attendant ceremony and formality tend to provoke an undue nervous tension. A rational dietary, without sugar or sweets in which the amounts of food with a high-carbohydrate content are approximated by household measures, may often be advisedly carried out." The success with which we are able to handle many diabetic patients with this plan is surprising. They follow their diet much more accurately. They are much more likely to persist in their treatment without resorting to insulin and they fail to become diabetic hypochondriacs who spend most of their time talking and thinking of their disease and incidentally doing a great deal of the talking to the doctor.

Not only do we strive for simplicity in the diabetic management but we do not reduce their calories to a degree formerly thought essential. A

generally accepted rule used by many men at the present time is that the caloric value of the diet should allow the patient to maintain his weight within ten per cent of the average for his age, size and sex. We feel that with the exception of a few days in the beginning of regulation the patient's diet should never fail to include sufficient calories for him to do his work and feel strong and well. This idea is that which is incorporated in the use of the maintenance diet used by most diabetic clinics at the present time. If one accepts the scientific accuracy of the basal metabolism test, the minimum intake for the patient is definitely specified irrelative of the patient's disease and tolerance. Sufficient calories for the basal metabolism plus those used in the activities of the patient must be provided in the diet if the patient is not to burn his own body to provide his heat requirement. The maintenance diet aims to approximate the patient's caloric requirements so that he will not be starved, even though he is on a diabetic diet. He is thus able to do his regular work, and if we have been successful in giving him a diet which is easy to prepare and not conspicuous considering all its content, the patient will not mind his disease.

In the second place we feel that the diet should be such that acidosis does not develop and that nitrogen balance should result. The reasons for these requirements are obvious, but some elaboration of the statement may be of interest. Acidosis in diabetes results from imperfect burning of fat. The work of Woodyat, Newburg and Marsh, and Wilder based on even older work, showed the relationship between glucose and fatty acid metabolism. From this work elaborate diabetic formulas were developed, which showed the ratio of the carbohydrates, protein and fat. The ratios were put upon a mathematical basis and the pendulum swung first from low carbohydrate-low total calorie types of diets to high fat, low carbohydrate and high calorie types, and then to the left again with high carbohydrate, low fat, high calorie types. At the present time the swing is toward that of moderate carbohydrates, moderately high fat and sufficient calories. The present formula is based partly on clinical experience and partly on scientific work previously mentioned. While these variations in the amount of carbohydrate and fat have been occurring the older work on protein metabolism has been quite well agreed upon. The dictum of one gram in the diet for each kilogram of the patient's weight is accepted by all with only minor variations. Of course, complicating diseases or a growing child may be reasons for disregarding this fixed rule.

In regard to the third requirement of the diet

that sufficient minerals and vitamins be included, the reasons for these are also obvious. It is comforting to realize, however, that these necessities will be provided if the patient is on any sort of a diabetic diet although the literature reports occasional cases of vitamin insufficiency in complicated cases when the patients refuse to accept the physicians' directions.

The fourth factor of extra calories for the diabetic child will be mentioned only for completeness. The care of the diabetic child is a complicated problem and one of which we will say no more.

To recapitulate then, these general considerations of the diet are well understood and accepted. They are not new and the only feature about them which is of particular interest is that the trend of the diet therapy of diabetes is toward simplicity and liberalization. It is, in fact, more of the application of psychology rather than science to the diet, and more consideration for the patient's problem rather than of a fixed mathematical equation which the patient must follow without regarding his own desires or happiness.

How is the general practitioner to handle his diabetic patients? It takes time and patience and considerable practice to work out the diabetic diet, and especially to train the patient to care for himself. I see no objections to the family physician following a book of printed diets. The use of manuals by Joslin, Wilder, and other authors, will teach the patients to become almost independent of the physician. The pamphlets issued by the various drug houses such as Squibb's, Stern's and Lilly's are scientific, and may be used by the doctor and patient with excellent results. The diet used by the University of Iowa was printed in the *JOURNAL OF THE IOWA STATE MEDICAL SOCIETY* in May, 1925, and this scheme has been so simple and satisfactory that there has been little change made in it except further simplification by the development of the "approximate diet sheets."

The method of using one of these printed directions is very simple. When the patient presents himself an effort is made to determine what his theoretical caloric intake should be, considering the factors of age, weight, height, sex and occupation. Wilder's chart is an ingenious scheme by which in a few seconds one can determine the basal caloric requirements demanded by the patient with the first four factors mentioned considered, that is height, age, sex and weight. This chart is found in all of the pamphlets mentioned. One estimates what extra calories are necessary for activity, then the sum of the calories for estimated basal metabolism plus estimated expenditure, gives the total number of calories which the diet should contain.

A diet which will approximate the number demanded is chosen.

It would seem that almost any printed diet is better than oral instructions, and more important, the patient begins his diabetic education so that as time goes on he becomes more independent of his disease, and the use of insulin may be postponed and avoided. I feel that a good proportion of diabetic patients if started with a manual and instructions in the use of the Benedict test, and some simple help from their physician, will do as well as those who are overwhelmed by a mass of rules, an exaggerated idea of the value of blood sugar determinations made at odd intervals, and a mass of undigested information as to the carbohydrate content of food. Of course, this statement is not applicable to patients with severe diabetes, child diabetes, or diabetes with complications, in each of which careful management at the very beginning is essential; nor is it intended to belittle the efforts of those physicians whose work makes diabetic patients really intelligent friends.

#### CHRONIC APPENDICITIS\*

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Before discussing such a controversial subject as chronic appendicitis, I wish to define some of the terms to be used. A chronic inflammation is characterized by slow progress and connective tissue formation. On this basis, I will consider as chronic, appendicitis which persists longer than seven to ten days and does not rupture. Recurrent appendicitis, with or without symptoms between the acute attacks, also falls in this category since this almost certainly represents acute exacerbation of an underlying chronic infection such as occurs in chronic salpingitis or chronic cholecystitis. Furthermore, keeping the characteristics of chronic inflammation in mind, it is obvious that, pathologically speaking, every case of chronic appendicitis had to pass through an acute stage before the inflammatory reaction reached the stage of connective tissue formation and chronicity. It is equally obvious, I believe, to those who have experienced the difficulties of diagnosing acute appendicitis, that the history of this acute onset may well be indistinguishable from the many abdominal pains to which children and adults are heir.

#### SYMPTOMS

The symptomatology must be based on the known effects of a chronically inflamed appendix on the body. What are these effects?

1. It is almost universally accepted that chronic

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appendicitis, as I have defined it, produces regional symptoms and findings of local inflammation, the severity of which will depend on the degree of inflammation, the location of the appendix, and the temperament of the patient. These are manifested clinically as dull pain in the right lower quadrant often aggravated by exercise; sharply localized tenderness in a constant location, usually near McBurney's point, which varies from time to time; and occasionally slight rigidity over the right oblique muscles.

2. Involvement of adjacent organs occurs occasionally. An unusual example of this is bleeding into the bowel. Murphy reports a case with occult blood in the stool and a hemoglobin of 40 per cent in which no lesion except a chronically inflamed appendix was found by preoperative study and exploratory laparotomy. Relief was complete during the five years she was followed postoperatively.<sup>1</sup> I have seen one case with repeated gross hemorrhages into the bowel from involvement of a loop of ileum lying over a chronically inflamed appendix. A more common example of involvement of adjacent structures is the case with urinary symptoms of pain in the loin, and frequency and burning pain on urination, produced by a long retrocecal appendix.

3. Disturbance of motility of the gastro-intestinal tract is probably the etiology of the majority of the symptoms of chronic appendicitis. Alvarez states that appendicitis may produce all grades of back pressure from a slight ileac stasis to vomiting of large amounts of intestinal fluid. He also comments on the different degrees of disturbances produced by similar lesions on different individuals.<sup>2</sup> Carman says that chronic appendicitis causes hyperperistalsis of the stomach, pylorospasm, and spasticity of the colon.<sup>3</sup> Bell,<sup>4</sup> during fluoroscopic examinations following an opaque meal, found spasm and increased irritability of the cecum consistently present in chronic appendicitis, and noted the disappearance of this finding after removal of the appendix. Smith, et al.,<sup>5</sup> studied a case of chronic appendicitis fluoroscopically and with a balloon in the stomach. They noted that pressure over the appendix produced prepyloric spasm of the stomach, at which time the epigastric pain complained of by the patient was reproduced. These disturbances of motility produce symptoms described by Longuet as appendicular dyspepsia. There is a full feeling or epigastric distress coming on usually within a half hour after meals. Flatulence and nausea are common. The constipation frequently present indicates disturbance of colonic motility. The so-called "toxic" symptoms of anorexia, headache,

and general malaise, are probably on the same basis.

4. Surgeons have not emphasized the importance of chronic appendicitis as a focus of infection, but this undoubtedly exists occasionally. I have seen one case of arthritis deformans in which the joint symptoms become worse with each attack of pain in the right lower quadrant. There was marked improvement in the joint symptoms following the removal of a chronically inflamed appendix. In another instance, a neuritic pain of six weeks' duration stopped three days after the removal of a chronically inflamed appendix with a small abscess about the tip. This pain has not recurred during nine months' observation. An occasional case with albumin and casts in the urine is reported to be relieved by the removal of a chronically inflamed appendix. There is a great deal of evidence suggesting that chronic appendicitis is an important etiologic factor in chronic cholecystitis and peptic ulcer, but this point has not been satisfactorily proved.

The syndromes which the individual patients present vary widely and may show any combination of the above effects. The symptoms usually vary in intensity from week to week, but the patient is seldom free from discomfort.

#### DIAGNOSIS

The diagnosis, which one occasionally sees made so glibly after a few minutes of history taking and abdominal palpation, remains the baffling problem of appendicitis. Reports of series of carefully studied cases followed for more than one year, constantly show 60 to 70 per cent cures, 10 to 20 per cent improved, and 10 to 20 per cent failures. Such results prompted Dr. Evarts Graham to say that chronic appendicitis has done more to discredit surgery than any other so-called diagnosis. These failures represent diagnostic errors and certainly constitute a challenge to our diagnostic ability.

The diagnosis consists essentially in establishing the fact that the appendix is chronically inflamed and that it is responsible for the symptoms of which the patient complains. The direct evidence consists of a history of attacks of acute appendicitis and a syndrome suggesting chronic appendicitis, definite tenderness in a fixed location at or near McBurney's point, slight rigidity of the right oblique muscles, and tenderness limited to the appendix as demonstrated by a fluoroscopic examination. The indirect evidence consists in ruling out other lesions which might be the cause of the patient's symptoms or findings by a careful history, a complete physical examination, and whatever laboratory work is necessary. Functional diseases of the colon, organic lesions of the cecum,

peptic ulcer, chronic salpingo-oophoritis, chronic cholecystitis, urinary tract pathology, and sacroiliac arthritis, present the most common difficulties in diagnosis.

The symptoms of spastic colitis are on a similar basis to those of chronic appendicitis, namely derangements of gastro-intestinal motility. Differentiation depends on demonstrating the etiology of this derangement, often a very difficult task. A history of increase of symptoms under mental stress favors the diagnosis of spastic colitis, whereas a history suggesting attacks of acute appendicitis favors the diagnosis of chronic appendicitis. Relief of discomfort after a bowel movement is typical of spastic colitis. Tenderness in the right lower quadrant may be present in both conditions, but is usually more sharply localized in chronic appendicitis. An x-ray study is often valuable. By fluoroscopic study it can be accurately determined whether the tenderness is only elicited by pressure over the appendix. The spasm due to spastic colitis is said to be distal to the hepatic flexure in practically all cases, whereas chronic appendicitis causes spasm of the cecum.<sup>5</sup> These two groups of cases merge indistinguishably into each other, probably because an irritable colon will respond to a very slight involvement of the appendix. As we approach this group in which disturbance of motility of the gastro-intestinal tract predominates, and evidence of inflammation of the appendix becomes minimal, appendectomy alone will give complete relief less and less often. It must be remembered that a gastro-intestinal tract which can be disturbed by slight degrees of inflammation of the appendix can also be disturbed by other slight abnormalities or bad habits. A period of observation and a trial on a medical regimen will often permit a fairly accurate analysis of the patient and allow one to estimate the amount of relief to be obtained by appendectomy. Prognosis in this group is always uncertain and should be guarded.

In urinary tract disease, especially hydronephrosis, we find pain in the epigastrium at irregular intervals, loss of appetite, and vomiting; urinary symptoms frequently are absent. Tenderness may be near McBurney's point because of ptosis of the right kidney. On the other hand, chronic appendicitis may produce typical symptoms of urinary tract disease, probably due to involvement of the ureter or pelvis of the kidney from an adjacent inflamed appendix. Occasionally the history of attacks of renal calculi is misinterpreted and the appendix removed between attacks. Careful analysis of the history will differentiate some of these cases. In others, a palpable kidney will lead the examiner to suspect the correct diagnosis.

When doubt exists pyelograms should be taken. If the retrograde method is used, one frequently notes a reproduction of the pain as the ureteral catheter passes over the brim of the pelvis, when the lesion is chronic appendicitis. Absence of demonstrable urinary tract pathology speaks strongly against that organ being responsible for the symptoms. Errors in this group are largely a matter of failure to consider this possibility in diagnosis. Differentiation of the many other lesions likely to be confused with chronic appendicitis is largely a matter of keeping the possibilities in mind and of thorough study.

#### TREATMENT

Medical treatment is of practically no permanent benefit in chronic appendicitis. This is sufficiently constant to be used as a diagnostic point in differentiating chronic appendicitis from spastic colitis. Because of the poor results obtained from appendectomy, some internists and surgeons maintain that operative treatment should be discontinued. It seems to me, however, in view of the rising mortality present in acute appendicitis which these patients are especially prone to develop, the low mortality of appendectomy, the fact that no other treatment approaches appendectomy in efficacy, poor as the results are, and in view of the fact that the difficulties are diagnostic rather than therapeutic, we have no choice but to continue present methods of treatment and attempt to improve our diagnostic skill.

#### SUMMARY

In summary, I wish to emphasize the following points:

1. Chronic appendicitis may be defined as an inflammation of the appendix of more than seven to ten days' duration, which has not produced rupture of the appendix.

2. Chronic appendicitis causes symptoms of local inflammation, inflammation of adjacent structures, disturbances of motility of the gastro-intestinal tract, and occasionally acts as a focus of infection.

3. The diagnosis is difficult to make because the symptoms are indefinite, variable, and often referred to other parts of the abdomen than the right lower quadrant, and may be simulated by many diseases.

4. Appendectomy gives only 60 to 70 per cent cures, largely because of diagnostic errors. These results will only be improved by more careful and thorough study of these cases.

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## TWO MASTOIDS\*

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The first patient was a female child two years and nine months of age.

*Personal history:* Mid-forceps delivery without complete dilatation of the cervix was accomplished after a fifty-two hour dry labor. The child did not breathe well for ten minutes after delivery. A tracheal catheter was used to clear mucus from the throat. They did not think the baby would live for four or five days. She did not nurse well until the ninth day. There is still some question in the minds of the family and physicians whether the condition was due to laryngitis produced by the tracheal catheter, pneumonia, or head injury at birth. The patient had her first cold at ten months with bilateral myringitis which lasted a week. She was observed at frequent intervals by an otologist who did not deem paracentesis necessary. Due to her irregularity of gait and tremor of hands, she was taken to a pediatrician for examination at the age of sixteen months. The condition was pronounced Little's disease (spastic paralysis, cerebral paralysis of children) due probably to birth injury. Exercises and orthopedic shoes were advised and tank physiotherapy at the age of four years. As to prognosis, he stated she would very likely improve and outgrow the defects at the age of eleven or twelve years through muscle training and natural exercises.

At the age of two she was sent to a preschool nursery where her I. Q. was considered well above average for a two-year old in memory, comprehension, and association, but below par in motor tests. She showed marked improvement in muscular coordination by associating with other children and using the playground apparatus. When twenty-three months of age she had another cold with red drums which cleared up in about six days. No perforation or paracentesis. At the age of two years and three months (May, 1932) an x-ray showed dense antra. About ten days later her tonsils and adenoids were removed and the antra punctured. The antra drained for about a week.

*Present illness:* On November 15, 1932, while taking a walk with her grandmother, the child sud-

denly started screaming, held her hand to her right ear and broke out in a cold sweat. Bilateral ear examination was made at the office, and the drums and canals looked perfectly normal. There was no tenderness or swelling over either mastoid process. Nasal examination revealed a small amount of mucous discharge. There was nothing abnormal in the throat. The child had an occasional cough but no fever. The grandmother was advised to return or call if the child had any further trouble. The patient was next seen late in the afternoon of November 24, nine days later. Her grandmother had noticed that the child was feverish earlier in the afternoon, she did not want food and preferred to lie quietly on the bed. She had been somewhat constipated. There was no complaint in regard to the ear and the child had made no reference to the ear in the nine-day interval. Chest examination revealed a few rough breath sounds but no râles. There was no rigidity or tenderness in the abdomen. On ear examination, the left side was normal. The right side showed a diffusely pink drum with no bulging and all land marks visible. There was no edema in the posterosuperior canal adjacent to the drum and no swelling or tenderness over the mastoid process. The temperature was 102.2 degrees, the pulse 116, and respirations 30 per minute. The child was seen again that evening and found to be resting easier with a temperature of 101 degrees. The drum and canal looked the same. When seen the next day, the grandmother reported that the child had rested some during the night but aroused at intervals. She had taken some nourishment but still did not care to get out of bed. At this time, temperature was 100.6 degrees, pulse 104, and respirations 28. No advance in the chest condition was noticeable. The drum was still pink but there was no bulging. There was no edema of the posterior canal wall and no swelling over the mastoid, but she was slightly touchy to pressure. She had not complained about the ear. A radiograph of the mastoid was advised. The next day I called to take the patient to the hospital for the x-ray and found considerable swelling and redness over the right mastoid process and slight edema in the posterosuperior canal wall. The drum was still only diffusely pink with no bulging. Temperature was 100.4 degrees, pulse 116, and respirations 32. The child was more active and wanted to be out of bed. An operation was advised but the grandmother wished to wait for the return of the child's mother who was out of town. The patient was taken to the hospital and bilateral radiographs taken which disclosed practically adult type of mastoid processes well pneumatized. The right side was cloudy and showed some evidence of breaking down of the

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intercellular walls below the antrum and toward the tip. Blood findings were hemoglobin, 85 per cent; red blood count, 3,910,000; white blood count, 14,400; polymorphonuclears, 64 per cent; small lymphocytes, 18; large lymphocytes, 8; transitional cells, 10. The urine was negative.

The child's mother arrived early the next morning and the patient was taken to the hospital. Because she had some cough, an internist was asked to examine her chest. He found some rough breath sounds, but no râles and no increase in breath sounds. Percussion was normal. The condition was pronounced bronchitis.

After the child was anesthetized, a paracentesis was done but no discharge appeared. On getting through the periosteum, a subperiosteal abscess was found. The outer table was eroded below and posterior to the antrum. On removing the cortex, pus and granulation tissue were found, the latter in large amount. There was excessive granulation tissue in the region of the antrum and above and posterior to the sinus. The sinus plate was apparently intact. No dura was exposed. Here was an extensive coalescing mastoiditis with perforation of the cortex, which had developed without subjective pain other than the one instance of two weeks before. About thirty-six hours postoperatively, the child developed a definite pneumonia which was confirmed by x-ray. The temperature rose from 100 degrees to 102, 103.6, 104.2 and 104.8 with pulse from 136 to 152 and respirations from 44 to 60. Forty-eight hours later the temperature was down to 100 degrees with pulse 120, and respirations 36. The careful nursing of the child's mother carried her through. After the temperature started to drop, she developed a profuse nasal discharge which was interpreted as sinus in character, and cleared up under conservative treatment in about five days. From then on she recovered rapidly and was able to leave the hospital on her tenth postoperative day.

#### COMMENTS

1. The severe lancinating pain two weeks before operation, might be explained by any one of several conditions. The child had some cough, possibly she forced some secretion into the eustachian tube with a temporary block. Possibly the middle ear was used as a bridge and swelling occurred in the mucous membrane of the aditus ad antrum and the antrum which produced a block and the pain. One might think of a labyrinthine involvement, but when the child was first seen she had no nystagmus or staggering. Williams<sup>1</sup> reporting on forty-one cases of masked mastoiditis says, "Lancinating pain over the side of the head, worse at night, in the absence of aural discharge or other signs of mastoiditis, was present in several patients. These usually showed an extra dural or perisinus abscess at operation." Such, however, was not found in this child at operation. There was no history of subjective pain during the fourteen-day interval.
2. One should take into consideration the previous otitis media. The x-ray showed very little, if any, interferences with pneumatization in this case. Judging from the work of Wittmaach, Albrecht and Schwarze referred to by Meltzer<sup>2</sup> there was no mastoid involvement with the previous attacks of otitis media. The child had bilateral antral puncture seven months previously. Although there was no history of trouble with the ears at the time, yet having been involved she may have had some sinus infection with the present illness. It did show up definitely postoperatively. Campbell<sup>3</sup> reports the close association of acute sinusitis and acute otitis media in infants and children. The question of latent infection arises. Some believe such a thing occurs. Kopetzky<sup>4</sup> thinks such a condition out of the question. He reasons that any abnormality, which exists after resolution, furnishes fruitful soil for subsequent infection, and that the secondary attack is produced by an entirely new infection.
3. In regard to hematogenous infection, such cases have the clinical signs of acute mastoiditis appearing fully developed simultaneously with the appearance of the symptoms of otitis media.
4. One might wonder if the Little's disease had a bearing in this case.
5. I feel that even if a myringotomy had been done when the child was first seen, forty-eight hours previous to the swelling over the mastoid process, it would not have alleviated the condition. Love<sup>5</sup> reports, "It is my experience that when myringotomy is done in typical cases of masked mastoiditis, an otorrhea does not obtain." He also states "Drainage through the middle ear is not feasible or it would have drained this way before." We know that in the new born the only area of pneumatization is the tympanic antrum. Early this area is filled with embryonic tissue which is gradually absorbed. At the age of this child, two years and nine months, this process should have been completed. We also know that when the mastoid process becomes infected, the mucous membrane of the aditus and tympanic antrum becomes greatly swollen. This interferes with drainage from the mastoid cells proper. Yet the young child may have adequate drainage from the middle ear by way of the eustachian tube and the process may take place in the mastoid. I think such happened in this case.



## CONCLUSION

What did I learn from this case? One should insist on a closer follow up in a case of this kind with a severe lancinating pain even though nothing abnormal is found on examination. One should not under-valuate minor changes in the drum and canal. One can have a surgical mastoiditis without a discharging ear.

The second patient was a white male, thirty-two years of age, a pharmacist by occupation.

*Family history:* His mother had a peculiar nerve involvement of the neck and side of the head, which was never definitely diagnosed, and severe headaches which were not diagnosed as migraine. She died at the age of seventy-two with a "slow paralysis." High blood pressure was denied.

*Personal history:* The patient had the usual diseases of childhood; scarlet fever, when seven. He frequently had head colds, but denied any earache or discharge from the ears prior to the present illness. His stomach had been easily upset all his life. Over-eating or change of water precipitated diarrhea. When in high school he went out for long distance running in track, but had to give it up because of severe exhaustion. He went out for track at State University of Iowa but after physical examination by the physician in charge of athletes was advised not to participate. He had had severe headaches during the last seven years, involving the right frontal region and extending over the right side of the head. The headaches started when he began working sixteen to eighteen hours a day at his profession. They were most likely to occur after he had gone home late at night, following a hard day's work at the store. Four or five years ago he said he had headaches about 98 per cent of the time, and for a period of six months had chills with the headaches. At this time he also had a green yellow color to his skin, and the mucous membranes and the fingernails were blue.

In the spring of 1929 he was seen by his family physician after he had been more or less unconscious all night. He could be aroused by talking loudly. The patient was taken to the hospital where the examination was practically negative; temperature was 105 degrees. Lumbar puncture was not done. He went with a member of his drug firm to St. Louis in the summer of 1929 and had a general physical examination including an electrocardiograph. He was told that his chills were cardiac in character, and that he had a slow heart. Small doses of digitalis were prescribed for the heart, and iron for his anemia. The physician advised him to stop work for six months or a year. This

he did not do. There was some relief from headaches for a time.

In the afternoon of October 2, 1930, his physician called at the house and found the patient had chilled nearly all morning. Temperature was 103 degrees, pulse 92, and respirations 30. The pupils were widely dilated, but reacted to light. The patient was rather sleepy and stuporous. He had had a bad headache all morning, which had become worse since the chill. Fifteen drops of digitalis were given. Respiration sounds in the right lung were rather blowing. The heart was apparently normal except for a slight systolic murmur over the body of the heart. He was advised to see a neurologist because of his constantly recurring headaches. A tentative diagnosis of brain tumor or abscess was made.

*Present illness:* The patient had been suffering from a severe cold for two or three days which had kept him in the house. On August 22, 1933, he called his physician because of a severe earache in the left ear. The physician examined the ear and referred the case. On examination an acutely inflamed and bulging drum was found with bloody blebs at the drum margin and two or three on the canal wall. There was no tenderness or swelling in front of the ear or over the mastoid process. Temperature was 99.6 degrees, pulse 88, and respirations 18. A paracentesis was done and a serosanguineous fluid bubbled out under pressure with a hissing noise. He was advised to stay in bed or at least in the house. The next day he felt better. The discharge was profuse, serosanguineous in nature, and required frequent changing of cotton. He had had no disturbance of sleep during the night. Temperature was 98.8 degrees, pulse 88, respirations 20. The urine examination was negative. The following day the temperature was 98.8 degrees, pulse 88. The patient did not complain of any pain, although a profuse serosanguineous discharge was still present. The fourth day he was up and about, and on the fifth day he came to the hospital for a dressing. He said he felt much better. Temperature was 98.8 degrees, pulse 88. There had been no disturbance of sleep. For the next four days his temperature ranged from 98 to 98.8 degrees, pulse 80 to 88. The discharge had become slightly thicker and less in amount. He was apparently progressing nicely. He had gone to the store for the last few days for some period during the day.

On September 3, 1933, or eleven days after the first call (paracentesis) he had slight tenderness over the tip on pressure. Temperature was 98 degrees, pulse 80. He reported perspiring some the night before, but he had had no pain. There was no edema. The urine examination was negative. The

next day he was still slightly tender over the tip but had no edema. An x-ray revealed a pneumatic type of process with large tip cells bilateral and clouding on the left, but apparently no breaking down of the intercellular walls. The cells extended well above the linea temporalis and well posterior to the sinus. Blood findings were, white blood counts, 3,950 and 3,650; polymorphonuclears 86; stab cells, 28; segmented cells, 58; lymphocytes, ten; monocytes, two; and eosinophils, two.

With a blood picture like this, we decided to try to build him up, and his physician started giving him intravenous therapy, using Brook's hemoprotein (Parke, Davis product). In the next eight days he received seven intravenous treatments, beginning with .1 c. c. and working up to .5 c. c. On September 12 he developed a slight edema over the process and still had some tenderness on pressure, although not marked. Temperature ranged from 98.4 to 98.6 degrees, and pulse from 82 to 88. He had been at his store daily. The discharge had become tenacious and the second paracentesis was done. On this date the blood count showed the following: hemoglobin according to Newcomer, 103; red blood count, 5,920,000; white blood count, 7,300; polymorphonuclears, 66; stab cells, 11; segmented cells, 55; lymphocytes, 27; monocytes, five; eosinophils, one; and basophils, one.

Because of the improved blood picture, it was decided to keep him under daily observation for the time being. During the next three days he felt that he was improving and said that he felt good. The tenderness on pressure over the mastoid was less and the discharge had decreased, but he still had slight edema. There was no pain at any time since the first paracentesis. He stated that he had only a feeling of fullness. The hearing on the affected side had improved. In spite of his feeling of improvement, in the light of his clinical findings, an operation was advised.

On September 16, he had some tenderness above the tip on pressure but no increase in edema. Temperature was 98 degrees, pulse 84. A bilateral x-ray was taken. The left side showed more clouding than before and a breaking down of the cell walls above the large cell at the tip. Operation was again advised. That evening at the store about 7:00 p. m. he felt that he had some fever and on taking his temperature found that it was 101 degrees. On taking it one hour later it was 99.6 degrees. He came over for an examination and cleansing of the ear. He blamed his stomach and the hot soup he had eaten for supper. On September 17, a third blood count was made: hemoglobin, 80 per cent; red blood count, 4,500,000; white blood count, 6,450; polymorphonuclears, 88;

stab cells, 42; segmented cells, 46; lymphocytes, ten; monocytes, one; basophils, one.

On September 19 an operation was performed. On getting through a comparatively thick cortex, pus welled up under pressure. A smear revealed an intracellular diplococcus, probably a meningococcus. The large tip cell and broken down area above was filled with pus. The remainder of the cells in the very extensive mastoid process were filled with granulations. Cells were found and exenterated well above the linea temporalis and well posterior to the sinus. The antrum was located very deeply. An area of dura, about six millimeters in diameter was uncovered posterior to the antrum. The dura appeared healthy and was not bulging. He had a rise of temperature to 101 degrees on the day after operation, but following this recovery was uneventful.

#### COMMENT

Here was a patient, subject to severe headaches and physically below par for several years who, subsequent to an upper respiratory tract infection developed an otitis media and a mastoiditis. His fever was never high, except the one time, and he had no pain, but a feeling of fullness in the mastoid region.

It is not quite typical of Kopetzky's<sup>4</sup> description of the painless type of mastoiditis in that he did not have an excessively profuse discharge except early and had slight tenderness on pressure, but no subjective pain. The pulse ranging from 82 to 88, when he was normally said to run a slow pulse, was indicative of trouble. One might consider the slight edema as Griesinger's sign, although he had no perisinus abscess. He did not have diabetes, tuberculosis or typhoid. I believe the hemoprotein was of value in building up his condition. Rosenwasser and Rosenthal<sup>6</sup> consider the Schilling or modified Schilling count valuable in diagnosis and prognosis. I feel that the modified Schilling count is of considerable value in checking the condition of the patient *along with* the clinical and x-ray findings.

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## Discussion

**Dr. D. O. Bovenmyer, Ottumwa:** Dr. Sampson has given an instructive and interesting resumé of two unusual mastoid cases. In order to explain the course of events in the first case one has to theorize. It seems to me that the best explanation of the first patient, as Dr. Sampson has stated, is that the otitis media aborted before there was much change in the middle ear and in the drum. I believe this abortion was brought about, as he has said, by evacuation through the eustachian tube. However, the infection in the antrum was retained, isolated from the tympanum by a block at the aditus. This block could have been edematous mucous membrane. It is conceivable that the infection localized in the mastoid from the blood stream, but I think it is unlikely. It must be true that many middle ear infections clear up spontaneously, as this one apparently did, by drainage through the auditory tube; especially in infants where there is often failure of the drum to rupture early. Undoubtedly many infantile fevers which are diagnosed as influenza or what not, could be accounted for if the ears were properly examined. Many of these illnesses are undiagnosed because the infections clear up by drainage into the nasopharynx instead of through a rupture in the drum.

The second case illustrates the value of close observations of patients with otitis media. No doubt a jeopardizing complication would have occurred in this patient if the careful clinical and laboratory attention had not been maintained. I think in this period of financial distress, we are likely to neglect the laboratory and x-ray data in this disease because of the cost to the patient. The serial radiograms and blood counts must have been the principal guides in the management of this masked type of mastoiditis. The use of the Schilling count is well brought out, and should emphasize its diagnostic value along with the other laboratory procedures in otology.

Since each case of mastoiditis is an entity, a direct set of rules cannot be formulated to cover all cases. Often purely personal experience will guide us in the management of an individual case, and make surgical intervention desirable. We have all heard of severe cases in which recovery occurred without treatment, and it is therefore difficult to judge operative indications or intervention by medical management based on those cases. As long as an actual principle cannot be set up, we should never forget that the underlying pathologic state is the determining factor in governing the management of these cases. We should realize that there are seasonal, individual, bacteriologic, anatomic, and yearly variations in the symptoms in these cases. A case seen this year will not be the same as one seen last year. Much depends on whether or not we are dealing with an encapsulated organism, and we must consider the individual patient in every instance.

We must know what is going on in the mastoid, and I believe early roentgenograms followed by others in a series are our best aids in pathologic interpretation. However, pictures show variations and must be inter-

preted with a great deal of common sense. The clinical observation should be considered before the laboratory observations. While it is important to know what is happening inside the mastoid, it is just as important to know what is happening in the internal ear, the brain, and the lateral sinus.

I have appreciated hearing these two interesting case reports.

**Dr. F. F. Agnew, Independence:** This has been a very interesting paper. It brings to mind some experiences which I feel are in keeping with the subject and I wish to make a point in connection with mastoiditis as it occurs in children. These observations cover the period of 1929 to 1933, inclusive.

In our group we made a series of observations, particularly among children with gastro-enteritis or gastric disturbances. These children are not going to be seen by the ear man very often, unless the general man who is usually in charge, has attention drawn to the ear because of a discharge. The most of the drums in these cases will not rupture and the real cause of the illness is left in obscurity. I believe that in the series of cases as we kept track of them during those years, the percentage of acute otitis media cases, where gastro-enteritis was the predominating symptom, exceeded 60 per cent. That may sound high, but is, nevertheless, the fact, and among this group of little folks several mastoids developed. Some of these first showed up as subperiosteal abscesses which mean broken down cortices. One of these little chaps on whom I operated was less than a year old, and even a curet was hardly needed to complete the operation, since on removal of a large sequestrum of bone and cells en masse, the labyrinth was well cleaned. There is another point in connection with mastoiditis which I wish to mention. We used to hear (or at least I did) considerable discussion about primary mastoiditis. I have never been convinced, and do not believe that such a condition exists, and feel that a very convincing argument can be made against it.

As to these little folks whom I started to talk about with their gastro-enteritis and so many times otitis media, they are feverish, do not sleep, nor take food well, bowels move frequently and the stools are foul. Such children will usually recover in a twenty-four hour period so that temperature is normal and food is taken well with an improved bowel condition if paracentesis is done on one or both ears as indicated. If the condition is not recognized and the drum fails to rupture, the condition drags along, sometimes for a long period to an apparent recovery. The mastoid, in this type of case is, I believe, diseased permanently, and will sooner or later develop into an active frank mastoiditis. It is from such condition as this that I believe the erroneously termed "primary mastoiditis" develops. At this time, I have a case at home of a baby who has gone through this complete routine. Return to a comparatively normal condition followed bilateral paracentesis with free drainage. The case is typical of many which I have seen.

It has been my good fortune to see these babies

because the other three of the group were seeing them in general practice and referred them for ear examination, when, if otitis media was found, paracentesis was done. In one protracted case that I well remember, paracentesis was done nineteen times before complete recovery was reached. Neither do I believe that an infection in a mastoid due to scarlet fever or septic sore throat ever recovers. Such infection becomes latent and at some time, on slight provocation, will result in active mastoiditis.

Just how the general practitioner is to recognize these cases I do not know, unless we, doing special work, push the thought and when there is an opportunity to bring the matter before a hospital staff or a medical group, drive home the point. I believe it is our duty to do this and that the effort would be compensated with gratitude. While this work is not new, I realize that, from conversations with men in a general practice it is not usually recognized.

### INFECTIVE THROMBOPHLEBITIS SECONDARY TO NECK INFECTIONS\*

SUMNER B. CHASE, M.D., Fort Dodge

Infective thrombophlebitis secondary to neck infections is a matter that has been brought to the attention of the medical profession in the last fifteen years. It is therefore, a comparatively new problem. The procedure in handling this complication is still debatable and should have the serious thought of the profession, because of its comparative frequency and its high mortality if proper procedures are not instigated, and because of the great improvement in the mortality rate if the complication is handled along certain definite lines. For the purpose of this discussion, infective sinus phlebitis and thrombosis will be considered as synonymous. The mortality rate is much higher in the former, but the history, diagnosis and procedure cover the same problems.

It is strange that as otologists and laryngologists, being familiar for years with localized venous complications, with general systemic infections, in mastoiditis, resulting from the proximity of infection to the large vessels, that we have not given more thought to patients with exactly the same resulting symptoms occurring from similar causes, within a few inches of the same site. We think nothing of peritonsillar abscess, superficial or deep, cervical abscess, etc., but if symptoms of general blood stream infection occur we have been prone to say that the patient has septicemia and allow him either to get well or die with perfunctory treatment, not stopping to wonder why or how he got the septicemia, whereas, if it occurred in con-

junction with a suppurative mastoiditis, we should get extremely busy.

The matter of deep neck infections, first began to receive attention by otolaryngologists in this country in 1917 in a report by Goodman<sup>1</sup> of a case of thrombophlebitis of the jugular vein, with pyemia, following a deep cervical abscess. He appended a bibliography of reported cases up to that date. In September, 1918, Moore<sup>2</sup> presented a case before the Chicago Laryngological and Otological Society of injury of the cervical sympathetic during drainage of a retropharyngeal abscess by the external route. This was followed shortly by a paper in December, 1919, by Dean<sup>3</sup> before the same group on a safe and simple approach to this condition. He emphasized the anatomic problem involved. In November, 1919, Mosher<sup>4</sup> reported a case of thrombosis of the internal jugular vein with pyemia, as a complication of retropharyngeal abscess. He writes in part: "This is the first case of its kind of which the writer has knowledge. The otolaryngologist is thus called upon to make a new diagnosis and to widen the scope of an old operation. Otolaryngologists have but to think back to recall many cases, as far as symptoms and signs go, to fit in with the one just recorded." Dr. Mosher, being in active military service at the time had not followed the literature as closely as was his habit and had missed Goodman's report which he credits in a later paper<sup>5</sup> of June, 1920, on the subject of deep cervical abscess and thrombosis of the internal jugular vein. Mosher refers to the case reported by Goodman in 1917, and his own case reported in 1919, comparing same. He then goes into the whole problem including anatomy, pathology, symptoms, course, and treatment, and concludes, saying, "Infection can reach the vein from the tonsils just as readily as the middle ear. It is another case of the obvious thing being hardest to see."

The problem was next discussed in 1928 by Richard Waldapfel<sup>6</sup> of Vienna in a paper on post-tonsillitis pyemia, which was accepted for the Copenhagen Congress of the same year. In this paper, Waldapfel briefly mentioned the work of Fraenkel, Uffenorde, and Zange, during the preceding four years. He discussed the problem from the study of a series of histologic sections. Mosher<sup>7</sup> in 1929, wrote a paper on the submaxillary approach to deep pus in the neck. He discussed, fully and clearly, the anatomic relations of the various structures of the neck in relation to the sites of infection. Dixon and Helwig<sup>8</sup> next brought up the subject in 1930 in a paper on thrombophlebitis of the internal jugular vein as a complication of tonsillitis. They reviewed several cases. Beck<sup>9</sup> in 1932 presented the most com-

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prehensive and instructive discussion of the subject up to that time. Later in 1932 Faier<sup>10</sup> wrote on retropharyngeal abscess of otitic origin, and appended a most complete bibliography. In 1933, Rubin<sup>11</sup> wrote on pyemia following acute tonsillar infections, with a very complete reference to the literature.

There are many other references to thrombophlebitis of the large or small vessels of the neck secondary to extensions of pathology in the vessels from adjacent regions, such as the jugular bulb, lateral sinus, jaws, face, etc., resulting in secondary cervical infections or complications, such as retropharyngeal abscess, severe external or pharyngeal bleeding, etc. All are of interest, but time does not permit mentioning them.

Undoubtedly every member of this section who has been practicing any length of time has had



Fig. 1. a—Skin. b—Platysma. c—Vaginal fascia. d—Sternocleidomastoid. e—Visceral fascia. f—Prevertebral fascia. g—Vascular sheath. h—Lateral extension of prevertebral fascia. i—Ala fascia.

one or many cases as he thinks back that come under this classification. They may have been reported at various meetings, but not published. T. R. Gittins of Sioux City had three cases which are typical, that he reported at a section meeting but did not publish. The point I am trying to bring out is that these cases are probably no more infrequent than infection of the lateral sinus, secondary to mastoid infection, and that they demand as serious consideration. Because of the infrequency with which these cases have been properly diagnosed, statistics as to incidence are very meager. Beck<sup>9</sup> reports as to sex, 58 per cent

females, and 41 per cent males; as to age, cases under two years, 20 per cent plus, two to seven years, 29 per cent, fourteen to nineteen years, 16 per cent, twenty to fifty-three years, 33 per cent plus. The complication, however, is no respecter of age or sex, and reported cases cover almost all ages and races from infancy to old age.

The etiology is extremely varied and can result from any deep neck infection from any source. Easily predominating, however, is extension from the tonsillar plexus of veins and lymphatics. It is important to study in each case, however, the original focus of infection, having in mind a clear mental picture of the pathology present in the original focus and the resulting route of extension to, and involvement of, the larger vessels deep in the neck. A few of the original foci aside from the tonsils may be briefly mentioned; peritonsillar abscess, the anginas, Vincent's or Ludwig's, and surgical trauma in draining these, retropharyngeal abscess, secondary to suppurating deep glands, caries of the vertebra, with dental abscess and infections, extensions downward from the mastoid as in Bezold's abscess, injuries such as fractures, perforations, operations, acutely infected cysts, salivary glands, etc.

Probably the most important phase of the understanding and recognition of this complication is a clear mental picture of the anatomy of the various compartments of the neck and the relation of the veins to the various structures.

The veins of the neck are fairly constant anatomically, as far as the internal jugular vein and its larger branches are concerned, but may vary considerably as far as the external jugular vein and the smaller branches of both internal and external jugular veins are concerned. Dean, Mosher and Beck have made the problem of the possible location of, and surgical approach to, the various areas of infection very clear. In my opinion, Dean's approach is the simplest and least complicated for infections from the level of the hyoid bone down, and Mosher's from this region up to the base of the skull. I will present a few slides as the quickest way to refresh our memories on this phase of the subject, quoting verbatim from Dean with regard to them:

"The external operation is also indicated because of the fact that the infection of the retropharyngeal space extends in the vertical direction between the fascial planes. It may reach from the basilar process of the skull to the upper part of the thorax. When we look in the back of a patient's throat we are not always aware of the extent of this vertical extension.

"When the external operation is performed, the

finger is introduced into the retropharyngeal space, and the extent of the abscess cavity can be easily determined. The drainage tubes can be inserted as high up as the base of the skull or as low down as the clavicle, if such a procedure should be indicated. The drainage which is secured by the external operation, and the proper insertion of drainage tubes, is certainly far superior to that which we get from the stab operation on the posterior wall of the pharynx.

"This operation does not contemplate the incision of any muscle except the platysma. No careful dissection is necessary. The operation is simplicity itself and may be performed almost altogether with the index finger. A vertical incision is made in the infrahyoid region along the anterior border of the sternocleidomastoid muscle. The lower end of the incision is opposite the cricoid. This incision should extend through skin, platysma, and vaginal fascia. The sternocleidomastoid is markedly convex toward the median line. This must be considered; otherwise, the operator might incise the muscle. Cutting the vaginal fascia at the medial limit of the muscle permits lateral retraction with ease, exposing the vascular sheath fully. The index finger is inserted into the incision, passed between the vascular fascia and visceral fascia. At this point the ala fascia is very loose and can be readily penetrated by the finger. After the finger has passed between the vascular fascia and the visceral fascia, it comes in contact with the prevertebral fascia, and is in the retropharyngeal space. The finger may then be flexed, turned in a vertical direction and readily passed up to the basilar process if desired.

"The drawings illustrate nicely the anatomic conditions met with in this operation:

"First, No. 1: We have a drawing showing the muscle fascial planes of a transverse section in the infrahyoid region, at the level of the fifth cervical vertebra. Inside skin and platysma, we find the vaginal fascia. Surrounding the larynx and pharynx, we find visceral fascia. Around the great vessels of the neck is the vascular fascia, which is connected with the visceral fascia by the ala fascia. Then, surrounding the vertebrae and the large muscles attached to them, is the prevertebral fascia and its lateral extension.

"A vertical incision is made in the point marked 'K'. The finger is inserted anteriorly to the margin of the sternocleidomastoid, passed between the fascia of the great vessels of the neck and the visceral fascia, to the point marked 'I.' The ala fascia is penetrated and the finger is in the retropharyngeal space. As soon as the finger is in the retropharyngeal space, the abscess cavity can be easily

felt, be it at this point or higher up. It usually feels like a tense bag. Unfortunately, usually this abscess cavity cannot be penetrated by the finger, and it is necessary to withdraw the finger, retract

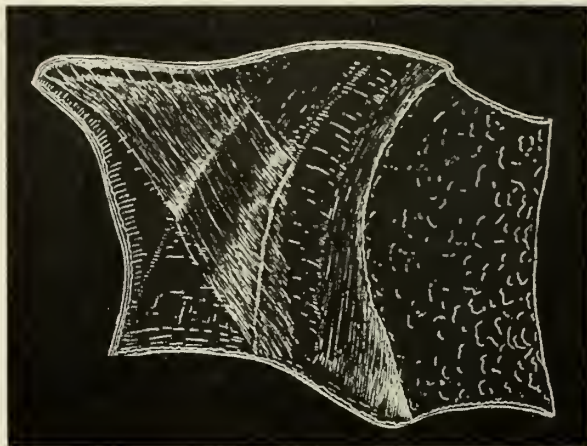


Fig. 2. Skin and superficial layer of superficial fascia reflected. Platysma, in deep layer of superficial fascia, fusing with vaginal fascia over posterior triangle.

the wound, and introduce a blunt pair of forceps, hemostat or what-not, and make an opening, or rather a tear in the wall of the abscess cavity; then the finger may be introduced, and the extent of the abscess cavity discovered.

"We also have a second and third drawing showing, first, the relation of the muscles after the removal of the skin; and second, a drawing with the sternocleidomastoid muscle removed, the vascular fascia retracted, and a guide introduced through an opening in the ala fascia into the retropharyngeal space."

If one, therefore, is called upon to operate in this location a careful review of the three foregoing papers with a study of the accompanying illustrations and diagrams will make one fairly certain and confident of his procedure. In dealing with infection of the veins of the neck, we, of course, first expose by the external route the infected area and then deal with the veins, in, and leading from this area. A thorough knowledge of the applied anatomy of the region is therefore absolutely essential.

According to Barker<sup>12</sup> "Thrombophlebitis is, by definition, a pathological entity. The term is well chosen because it is doubtful if thrombosis ever occurs in a vein without some reactive inflammation of the vein itself, although this varies greatly in degree in different cases. It is also doubtful if phlebitis as such can be recognized clinically if it is not accompanied by some degree of thrombosis. The problem of the etiology of thrombophlebitis remains obscure; in fact the mechanism of the for-



mation of the lesion is still unknown in many cases. There is evidence that there are three primary factors in the pathogenesis; first, an abnormal tendency of the blood to clot; second, stasis; and third, a local lesion of the venous wall. It has been assumed that these factors separately or in combination are responsible for production of the various types of thrombophlebitis."

There are several classifications, according to Barker; local, hematogenic; secondary, and primary; but the one with which we are concerned in this paper is the local one that results from direct involvement in some infective process, and extension of the same along the vessels. The lesions represented in this category are serious and often fatal, because they allow direct entrance of bacteria into the blood stream.

As far as the pathology is concerned we are dealing with a condition in which there is at first a local infective process which is complicated by an infection of the venous return from that region which tends to extend along the vessels, from smaller to larger, in any direction, and does not tend to become localized. It results in:

A. Further extension of the infective process into surrounding areas that normally would escape infection if the pus traveled along through fascial compartments, with further resulting complications, from direct proximity of the infection in the vessels.

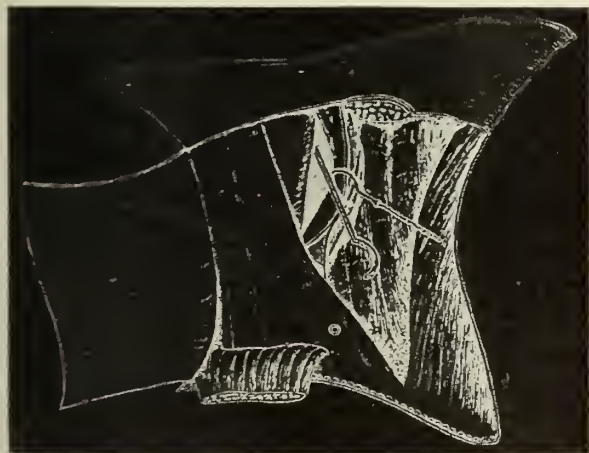


Fig. 3. Vaginal fascia below hyoid bone reflected exposing neutral zone, between hyoid bone and cricoid cartilage. Muscle compartment crossing vascular sheath at level of cricoid cartilage.

B. A general blood stream infection with septic infarcts scattered throughout the body.

C. No infarction, but general pyemia.

The symptomatology is clinically one of the most important parts of the subject. I will not attempt to give case histories except to point out the salient

features which are pathognomonic and more or less common to all.

1. They all give a history of a mild or severe localized infection, in an area drained by the large cervical veins. This may be, a simple tonsillitis, peritonsillar abscess, retropharyngeal abscess, abscessed tooth, in the mandible, Vincent's angina, or possibly simply a diffuse nasopharyngitis or what-not.

2. The secondary venous infection may manifest itself at once or the original infection may apparently have quieted down, two or three weeks before, when suddenly the venous complication is made manifest by a rigor and sudden rise in temperature with the continued daily picture of severe, general sepsis. Locally, there may be nothing or:

a. There may be a one-sided pharyngeal or external area of swelling or tenderness.

b. As the condition progresses the sepsis continues, also the area of localized swelling and tenderness following the course of the internal jugular vein in the neck or its collateral branches, either up or down.

c. Areas of embolic infection may develop in the lungs, joints, viscera, brain, etc.

d. If the infection extends upward, signs of internal ear, middle ear, or mastoid involvement may appear.

e. There may be symptoms of superficial cellulitis in the neck, face, scalp, etc.

The blood picture and general condition is that of a severe general sepsis. The onset may be stormy and the whole condition subside in a few days, but I believe that this is only true when the local symptoms subside in conjunction with the general symptoms and it indicates that nature has succeeded in limiting the process to a small collateral vessel.

These cases often give the history of having had repeated incisions for drainage of a localized abscess, without pus being evacuated, or a local abscess may have been freely evacuated without relief of the septic symptoms. They have often been treated for angina, neutropenia or agranulocytosis, leukemia, infectious mononucleosis, relapsing fever, typhoid, and other conditions, with, of course, no effect. These cases usually terminate fatally by pulmonary or cerebral complications. The patients may seem to be doing fairly well, and die suddenly, possibly as the result of an embolus into a vital area. In other words, they present the same clinical course as a septic sinus phlebitis secondary to mastoid infection, only there are no middle ear or mastoid symptoms present. One often wonders in cases of so-called "primary jugular bulb" infection where no evanescent middle ear

symptoms have been present, if a preceding pharyngeal infection had not been overlooked, and the infection was in the vein a centimeter or so further down, or if in these cases it had not started a little further down, working up to the middle ear and producing trouble there. These cases are often diagnosed as pneumonia, or meningitis, because of the symptomatology and physical findings connected with these areas, and the preceding throat infection, tenderness and swelling in the pharynx or along the anterior border of the sternomastoid is entirely missed or ignored, as well as the initial chill and rise in temperature. The whole problem when one has this picture in mind, has read the literature, seen the cases, noted the pathology in the large veins of the neck and the multiple embolic abscesses in the lungs, joints, etc., at autopsy, makes one seriously studious when we hear of a case of acute generalized peritonitis, etc., suddenly following a sore throat.

The diagnosis is important because of the difficulty in being absolutely positive and because of the radical and early procedure required if it is positive. The following points should be emphasized:

1. The history is all important.
2. The local symptoms must be carefully scrutinized.
3. If definite distant metastases can be determined it is of great help, but often too late.
4. Blood cultures may or may not be of help.
5. The Toby-Queckenstedt test may help.

In the final analysis, however, it depends on the clinical acumen and experience of the surgeon or internist, just as it does in infection of the sinus in the mastoid. Direct inspection is of little value. As yet, I have to be shown how to determine the pathology that is present in a vein without opening it.

In differential diagnosis, the correct one may be arrived at by the process of elimination. Everything else that will produce chills and sepsis, especially if connected with a throat lesion or cervical symptoms must be ruled out. They often start with a Vincent's angina, but the angina usually responds promptly to arsenicals, or bismuth; intravenously in the former, and intramuscularly in the latter. If the angina clears up and the sepsis continues, there is probably a venous complication. Neutropenia or agranulocytic angina start with throat symptoms and often a severe septic course, but the blood picture tells the story, besides the throat symptoms usually appear after the general symptoms have been in evidence for some time, while in venous complications, the local symptoms precede the general. In mononucleosis or leukemia the same is true, and again the blood picture tells

the story. There is nothing to prevent these patients from having both conditions, but if this were so, one would hesitate to interfere, because they probably have a rapidly progressing fatal disease in addition to the vascular complication. There is matter for thought here; if both are present what part does the thrombophlebitis play in the fatal outcome? The x-ray and serologic tests will be of aid in ruling out relapsing fever, typhoid, pneumonia, acute rheumatic fever, etc. All localized pathology must be ruled out; such as acute localized streptococcal nasopharyngitis; Ludwig's angina; tuberculous caries of the cervical vertebra; peritonsillar abscess; lingual abscess; acute parotid or submaxillary abscess; alveolar abscess;



Fig. 4. Drawing of a dissection done by author. It demonstrates the external mastoid vein emptying directly into the internal jugular vein. A indicates the posterior auricular vein; B the external mastoid vein; C the external jugular vein; and D the internal jugular vein.

infected cysts, branchial or thyroglossal; Bezold's abscess; sphenomaxillary abscess; and retropharyngeal abscess, secondary to breaking down lymph nodes. They all may produce chills and sepsis.

To summarize, our judgment and diagnostic ability may be tried to the utmost in some cases, but if two things are present; first, an extending process along the large venous channels of the neck, or second, definite embolic extensions, with a picture of grave general sepsis, one need hesitate no longer. If these are lacking, then again the gravity of the condition if present and not cared



for would warrant a mistake, because there is nothing fundamentally hazardous in the proper procedure, as far as the patient's life is concerned.

In regard to the *prognosis*, if the condition is unrecognized and untreated, it is nearly 100 per cent fatal. If diagnosed early and treated energetically it at least presents as good a prognosis as infection of the vein in the mastoid when properly handled. Infective phlebitis always presents a higher mortality than infective thrombophlebitis. In Beck's series of twenty cases, not all of which were proved phlebitis or thrombophlebitis, he only lost one patient, but all had deep cervical infections. From a survey of the literature, I would put the mortality at about 50 per cent for all cases, if operated upon by the open method. We are, therefore, confronted with an opportunity to cut the morbidity of an almost universally undiagnosed and untreated condition in half. We must remember that occasionally some of these patients get well without anything as mastoid cases with lateral sinus symptoms, but patients who were operated upon, and in whom the presence of extensive venous infections was proved often got well, and other patients who were not operated upon died, and showed at autopsy about the same pathology. Again it is a matter of experience. Those of us who have diagnosed a case of infective lateral sinus thrombophlebitis and left it to nature's care do not do it a second time, even if the patient eventually got well, and the same thing applies here.

The treatment is surgical; extended exposure and drainage of the infected area and ligation and drainage or resection of the suspected vessels. Again judgment comes into play. If drainage of the abscess seems sufficient we can leave the wound open and go back and take care of the vessels later if indicated, or close it up later if further procedure is not indicated. If we wait we are taking a chance with our eyes open of getting the lungs, joints, viscera or brain full of infected emboli where we cannot get at them. Personally I hate to take that chance. I do not think it makes much difference whether the deep abscess is a perivascular affair from the infected vein, or whether there was a deep abscess first and the vein became infected later. If it is a small vein and nature is taking care of it, we will not be in there anyway, and if we operate, we might just as well play safe and "kill two birds with one stone." As to the old argument, about whether or not ligation with drainage or resection of an infected vein, does any good in limiting a general infection to a local one, again results and experience are the proper criteria to follow and in this condition the statistics are all for the above procedure. From the standpoint of

the mechanical production of a limited infection; namely, slowing the blood stream, producing stasis, removing infected venous walls, or draining them and putting the blood in a favorable condition to clot; it is a reasonable procedure. If we can change a generalized infection to a localized one, and then provide adequate drainage for that one, we have done all we can do from a surgical standpoint.

General treatment is supportive with whole blood transfusions whenever the red cells get below 3,000,000 with hemoglobin below 50 per cent. It may be of value at once, to effect greater coagulability and for friendly antibodies that may be present. The balance of treatment is symptomatic.

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#### Discussion

Dr. T. R. Gittins, Sioux City: Mr. Chairman: This is a very interesting subject that Dr. Chase has brought us today. I would like to mention briefly our experiences with five patients. Each of these patients developed symptoms of blood stream infection with chills, high fever and positive blood cultures after ordinary throat infections. In two instances the original infection was a peritonsillar abscess; in two others it was acute follicular tonsillitis; and in one it was acute pharyngitis. Four of these patients died within two or three weeks of the original infection; one patient is alive and apparently completely recovered after four months. In this latter patient repeated blood cultures were positive for a streptococcus and there was a secondary chest condition which was considered metastatic. The only treatment consisted of transfusions. The blood culture became negative.

In one patient the jugular vein was tied and resected without influencing the fatal termination. In one other patient there was definite tenderness and

thickening over the jugular vein with a clinical course that suggested jugular thrombosis. This patient, however, was not seen until the general condition was extremely serious. He developed a rapid chest involvement before any exploration of the jugular vein could be done. In the one patient who is still alive there was a discharging ear present at the time the throat infection and subsequent blood stream infection developed. Acute mastoiditis developed and was drained without influencing the course of the septic infection. The lateral sinus appeared not to be involved. Several transfusions were given. It is probable that the mastoiditis was coincidental and had nothing to do with the blood stream infection. It seems likely that mastoid infection may be blamed at times for a blood stream infection which really originated in the tonsils or pharynx.

Within the last six months we have had two children with repeated positive streptococcus blood cultures after throat infections who are alive and in apparent good health. What the future holds for these two we do not know, but experience indicates that we should not give up too easily in positive blood stream infection.

Whether or not tying or resection of the jugular vein is of value probably depends most upon the symptoms and clinical course of each individual case and the judgment of the surgeon in charge. Certainly no definite rule can be laid down. A real chill or series of chills followed by high spikes of fever during tonsillitis or a peritonsillar abscess should always be interpreted as the beginning of real trouble, a blood stream involvement. In our cases the throat looked very innocent at the time the general symptoms were most severe. I wish to thank Dr. Chase for speaking on this subject and to compliment him on the way it has been presented.

Dr. F. H. Reuling, Waterloo: When one considers the histopathology of abscess formation, the transudation from the vessels, the laying down of a round cell infiltrate, and the phlebitis and the thrombosis of the involved vessels, one wonders why we do not have much retrograde thrombosis to the internal jugular vein. Certainly in every tonsillectomy we have a thrombosis of the vessels of the tonsil fossa, and probably mouth organisms are caught in that thrombus. It would appear therefore, that we only get fatal or serious septicemias from an extension of the thrombus when one or more of three conditions are present.

First, very virulent organisms; in Beck's series over 50 per cent showed a hemolytic streptococcus. The remainder showed one of the other strains of streptococci, associated with the staphylococci and pneumococci.

Second, a low resistive power, such as is present in any of the cachetic states; or, a sluggish massing of the defenses of the reticulo-endothelial system.

Third, pus under pressure, or pus in one of the deep fascial compartments of the neck, which cannot get free exitus.

Hence, we are brought to the conclusion, as in Dr.

Chase's very excellent paper, that when we have any infection about the head we should be on guard for possible serious thrombophlebitis producing a septicemia, but we should be particularly watchful when we have an involvement of one of the deep fascial compartments of the neck, and then certainly external drainage is indicated early.

Dr. George C. Albright, Iowa City: Mr. Chairman: I want just one moment of time. I was rather surprised when Dr. Chase described the external approach to a retropharyngeal abscess and gave credit for that approach to Dr. Dean.

There are ten men in the room, or were ten men in the room, when the paper was read who will bear me out in the statement that the originator of that approach was the late Dr. Prentiss. If credit should go to anyone for originality, it should go to Dr. Prentiss, and not to Dr. Dean. As much as I admire the work of Dr. Dean, I do admire more the intellectual integrity that always characterized the work of Dr. Prentiss. I believe all of the "Dean men" as we used to call ourselves, will bear me out that Dr. Prentiss devised this external approach to the retropharyngeal abscess; he was the originator of it.

Dr. Chase, closing: I want to express my appreciation for the discussion. In this condition, the course of action, in my opinion, is a matter of judgment. In a patient running a similar course with mastoiditis if a lateral sinus infection was suspected, two courses might be pursued; if the lateral sinus were exposed and a perisinuous abscess found, you might continue observation a little while; if the patient was extremely sick, it might be decided to investigate the lateral sinus at once.

In a deep neck infection, following a superficial throat infection with a definite chill and signs of general blood stream infection, certainly if a definite metastatic abscess develops, probably the safest course is drainage of the abscess, and ligation and obliteration of the venous supply in the infected region. These distant emboli usually form a secondary abscess, and we have all seen them in the lateral sinus cases where peripheral abscesses in the lungs have ruptured into the pleural cavity and been drained. We have seen ankle joints, knee joints, etc., that have had to be drained following a secondary abscess. These definite metastases are positive indications that there is a thrombophlebitis somewhere in the body throwing infected emboli into the general circulation.

I saw a case a few weeks ago, where a girl had a very septic temperature, starting with chills, following an acute throat infection. She also had a temperature rise on one day to 106 degrees followed within a half an hour by acute respiratory collapse, cyanosis, and difficulty in breathing. She had definite tenderness along the jugular vein in the region of the anterior border of the sternomastoid. She had been running a septic temperature for two weeks before we saw her, and had gone through the usual serologic and bacteriologic tests for typhoid, etc. She did not develop a definite metastasis in the lung, she had



no further chills, and extreme rise in temperature, the tenderness and swelling in the left neck gradually subsided along with the general symptoms, and she recovered. This patient undoubtedly had a thrombophlebitis in a small vein leading into the jugular vein, but nature accomplished its own cure.

Another case started the same way, showing progressive involvement of the jugular vein and all of its collateral branches. The temperature remained high and septic, the girl developed abscesses in the lungs and joints, she developed cellulitis of the face, of the scalp, on the same side, of the neck, of the pharyngeal wall on the same side, facial paralysis and deafness on the same side, and meningitis. The throat was repeatedly lanced because of bulging, but no pus was ever found. She died of pulmonary and meningeal infection. This was a typical case in which as soon as definite metastases were found or with the onset of the definite extension of the thrombophlebitis, the girl might have been saved.

The proper time to interfere is definitely a matter of clinical and surgical judgment, as it is when the lateral sinus is infected secondary to a mastoiditis. If we view the case of neck infection clinically, as we do the case of mastoid infection, using the same general criteria for operative interference, we will probably make mistakes in very few cases, neither waiting too long or interfering unnecessarily. The condition demands thought and consideration from all of us in view of the little thought that has been given to this complication by the men in our specialty; the fact that we have all undoubtedly seen these cases and will see them again; and because in the reported cases, the mortality has been reduced from 100 to 50 per cent.

I wish to take this opportunity to express to the section my appreciation of the honor of being selected as chairman for the coming year. I wish to assure you that I will give my very best efforts to make the coming meeting a success, knowing that you all realize that a worthwhile meeting depends upon the cooperation of the members of the section, and feeling sure that we will have same.

#### PROPER DRAINAGE OF INFECTIONS OF THE HAND\*

McMICKEN HANCHETT, M.D., Council Bluffs

Proper drainage of infections of the hand requires a clear conception of the part of the hand involved. This in turn requires an accurate idea of the anatomy of the hand; its tendons, tendon sheaths, fascial spaces and the possibilities in each instance. No consideration of this subject should begin without giving full credit to Kanavel and his associates who, for twenty-five years have emphasized this point, and all work done since Kanavel's original work was published, has been based

upon his findings. This paper is for the purpose of re-emphasizing the importance of proper treatment of hand infections and calling your attention to certain well known, but usually ignored, anatomic facts which should always be considered. Of severe infections of the hand most commonly seen, there are three main types; first, acute lymphatic infections; second, infections of tendon sheaths; and third, infections of the fascial spaces of the palm.

#### ACUTE LYMPHATIC INFECTION

This diagnosis is made after a trivial injury; chill and fever accompany onset, and signs of general systemic infection are present. Local signs of the infection are throbbing pain; redness; tenderness and swelling; red streaks up the arm; tender swollen epitrochlear, axillary or supraclavicular glands.

The treatment should include:

1. Absolute rest in bed.
2. Forced fluids.
3. Hot moist dressings, to include entire extremity.
4. No drainage.

#### INFECTIONS OF TENDON SHEATHS

Anatomy. The tendon sheaths of the index, middle and ring fingers extend from a point just distal to the distal flexion crease of the finger to a line closely approximating the distal flexion crease of the palm. They lie in close apposition to the palmar surface of the phalanges and are separated from the bone only by a thin layer of connective tissue. Opposite the proximal interphalangeal joint, particularly, there is very little tissue intervening between the tendon sheath and the bone. The sheath of the long flexor of the thumb begins at a point slightly distal to the flexion crease of the thumb, and accompanies the flexor pollicis longus through the palm to terminate a thumb's breadth above the anterior annular ligament in an expansion known as the radial bursa. Over the first metacarpal bone, it lies between the flexor pollicis brevis and the adductor obliquus. The motor branch to the muscles of the thenar eminence lies superficial to the tendon sheath, approximately a thumb's breadth below the annular ligament. The radial bursa ends as a blind pouch under the tendon and upon the pronator quadratus, separated by the latter from the wrist joint and the radio-ulnar joint.

The tendon sheath of the flexors of the little finger begins just distal to the distal flexion crease of the fifth finger and extends proximal-ward, to become continuous, in the majority of cases, with the ulnar bursa, a good sized sac, which lies over

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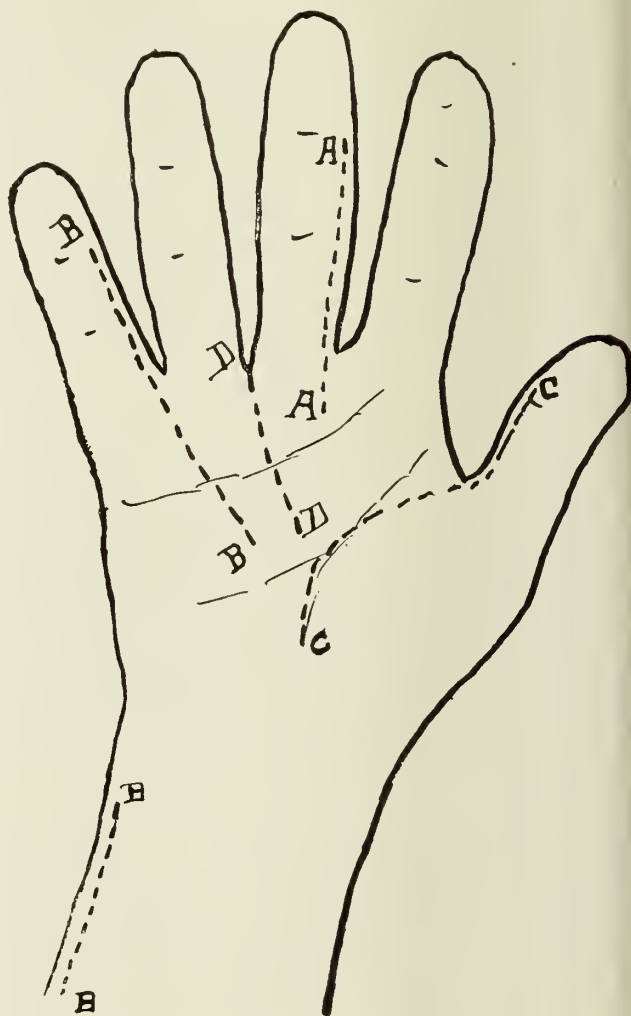
the metacarpal bone of the ring finger and the head of the middle metacarpal bone, and extends proximal-ward under the anterior annular ligament a thumb's breadth above the ligament. Here it lies beneath the flexor tendons, upon the pronator quadratus muscle and is separated by this muscle from the wrist joint. In the region of the wrist joint the ulnar bursa forms a more or less complete sheath for the flexor tendons, being pushed radial-ward, as it were, in three pockets—one superficial to the tendons, one between the superficial and deep tendons and one, the largest and most distensible, underneath the deep tendons.

The exact arrangement of the tendon sheaths in the proximal portion of the palm and over the wrist is subject to considerable variation. The important fact from a practical standpoint is that, in the majority of instances, the radial and ulnar bursae communicate with one another, so that an infection of the tendon sheath of the thumb and radial bursa extends to the ulnar bursa and distally along the tendon sheath of the little finger; or an infection originating in the tendon sheath of the fifth finger may take the opposite course.

#### INFECTIONS OF THE FASCIAL SPACES OF THE PALM

The middle palmar space is probably the most important fascial space in the hand. It is rather shield-like in shape and situated deeply in the ulnar half of the palm, posterior or deep to the flexor tendons contained in the ulnar bursa proximally. Distal to the bursa in the palm, the flexor tendons of the third and fourth digits and their lumbrical muscles, as well as the lumbrical muscles of the fifth finger, overlie this space. A sheet of fibrous tissue separates the flexor tendons, their accompanying lumbricals and the extension of the ulnar bursa from this space. Posteriorly, there is a sheet of fibrous tissue which separates it from the third and fourth metacarpal bones and their interosseous muscles. Proximally, this space extends almost to the distal border of the annular ligament. Radially, the space is bounded by a connective tissue septum, firm everywhere except at its thin proximal end, separating the middle palmar space from the thenar space. This connective tissue partition passes from the palmar aponeurosis in front to the metacarpal bone of the middle finger behind. It is attached to the bone along the line of origin of the adductor pollicis muscle (transverse). Medially, the space extends to the flexor tendons of the fifth finger, contained in their flexor sheaths. Distally, the space extends to the level of the distal transverse crease of the palm. Here it may have from one to three diverticula—corresponding to the three lumbrical muscles or

fascial spaces around the lumbrical muscles of the middle, ring and little fingers. These prolongations lie in close relationship to the sheaths of the flexor tendons of the third, fourth and little fingers.



A. Incision for index, middle and ring fingers.  
B. Incision for little finger and ulnar bursae.  
C. Incision for thumb.  
D. Drainage of middle palmar space.

These lumbrical muscle canals or fascial spaces surrounding the lumbricals, of which there are four, form channels from the tendons of the flexor profundus muscles in the palm to the radial sides of the dorsum of their respective digits. Normally, they convey the lumbrical muscles, but the important practical point to be emphasized is that they may also carry pus to the web spaces between the fingers, or they may transmit infection from the ruptured proximal extremities of the flexor tendon sheaths, or from abscesses in the web spaces of the fingers, upward into the middle palmar or thenar spaces.



There is a close relationship between the middle palmar space and the lumbrical muscles of the middle, ring and little fingers, and between the thenar space and the lumbrical muscle of the index finger.

The thenar space is not so extensive as the middle palmar space. It is situated on the radial side of the middle metacarpal bone, and is directly anterior to the fascial covering of the adductor transversus pollicis muscle. Anteriorly, are situated the flexor tendons, the flexor pollicis longus and radial bursa. On the ulnar side is the fibrous septum previously referred to—along the attachment of the adductor transversus pollicis. Radially, the space extends nearly to the first metacarpal bone. Distally, the level is approximately in line with the radial end of the distal transverse crease of the palm. There is usually a prolongation of the space along the lumbrical muscle canal or fascial space of the index finger. Proximally, the space extends not quite to the distal border of the annular ligament.

The diagnosis of the tendon sheath infection of the index, middle and ring fingers depends upon a few definite and characteristic symptoms and physical findings. First, there is diffuse swelling and redness, which is usually marked on the dorsum of the finger because the soft tissues of the dorsum are more distensible than the firm fibrous flexor tendon sheaths and because the lines of lymphatic drainage pass to the back of the hand. Second, there is tenderness which is definitely limited to the anatomic outline of the sheath. Third, the finger is held in a slightly flexed position, and any attempt to extend it causes excruciating pain.

With infections of the thumb and little finger, the same symptoms are present in an exaggerated form. The swelling, pain and tenderness are more diffuse because of the greater area involved. In addition to the swelling of the hand itself, there is a slight bulging of the soft tissues above the anterior annular ligament, which becomes more marked as the condition progresses. Ulnar bursa involvement, either from the little finger or originating in the thumb and crossing over, is indicated by a localized point of tenderness just proximal to the point where the distal flexion crease of the palm meets the hypothenar eminence.

Infections of the fascial spaces of the hand include first, those in the thenar space; and second, those in the mid-palmar space. Of less importance are those in the lumbrical space, the hypothenar space, and the fascial spaces on the dorsum of the hand. They are caused by direct infection from deep penetrating wounds, and (most commonly) by extension from tendon sheath infection.

A diagnosis of infection in the thenar space is made on evidence of pain, tenderness and swelling of the thenar eminence, exaggeration of normal prominence of the thenar eminence, or thickening of the web of the thumb; and in the mid-palmar space if there is pain, tenderness and swelling in the distal portion, ulnar half of the hand; spreading of the little, ring and middle fingers; thickening of the web between these fingers in the lumbrical space; and if the hand has lost concavity.

#### TREATMENT

It is first essential to make a diagnosis and to decide whether conservative measures will suffice or incision is necessary. Hasty and ill advised incisions may do serious harm. If in doubt, it is better to err on the side of conservatism. Many patients have lost their lives because of surgical incisions in lymphangitis and streptococcic cutaneous and subcutaneous infections. On the other hand, delay in opening a tendon sheath infection will increase the probability of a necrosis of the tendon. It should be drained as soon as a probable diagnosis is made. Fascial space abscesses are seldom so serious that injury will be done by waiting until the diagnosis is certain. It is the first duty of the surgeon, therefore, to make the differentiation between these three groups of cases, meanwhile starting conservative treatment, which consists of large hot moist dressings, absolute rest, forcing fluids, and free elimination.

#### INCISIONS

Incisions for drainage, when decided upon, should be done in a bloodless field. A Martin elastic bandage applied from elbow to shoulder is the best. Kanavel allows the bandage, which has been loosened just enough to permit circulation but tight enough to prevent too rapid absorption, to remain in place after incision, for from six to twenty-four hours. This is gradually loosened. It prevents the overwhelming of a very toxic patient by additional toxins. A second requirement is a general anesthetic. Nitrous oxide or ethylene are the anesthetics of choice, owing to their non-toxic and transient effect. The surgeon should always convince himself, before permitting the patient to waken, that he has done his work thoroughly so that the operation will not have to be repeated upon subsequent days.

Local anesthesia has no place in this work for two reasons. First, complete exposure and investigation cannot be accomplished; and second, the hypodermic injection of tissue about an infected area cannot be done without danger of causing a spread, either locally or systemically.

In draining the tendon sheaths of the fingers, the

incision should be made well to the side of the finger to avoid the blood vessels and nerves and the flexion creases. This latter precaution prevents herniation of the tendon from its sheath, a complication which occurs very promptly if the sheath is opened through the middle of the palmar crease of the finger. Edema of the subcutaneous tissues, due to inflammatory reaction, obscures the tendon sheath unless the superficial tissues are widely retracted. The sheath will then be seen to be a grayish edematous structure instead of the thin translucent membrane through which the shining tendon can normally be seen. The tendon sheath is then incised longitudinally. At this time, the pus pours out. Only in very early cases will the sheath not be distended with pus.

If the tendon sheaths of the little finger or thumb are involved, the incisions must be extended upward into the palm. (See illustration.) One should avoid cutting through the muscles of the thenar eminence in the case of the thumb, by making a curved incision to the ulnar side of the thenar eminence and retracting the thenar muscles radial-ward. This incision should not extend beyond a point one inch distal to the distal border of the anterior annular ligament, otherwise the nerve supply to the thenar muscles may be injured. One should also remember that the flexor tendons of the little finger run obliquely upward and radial-ward, and not in line with the fifth metacarpal bone. Usually such an infection also requires an incision on the ulnar side of the forearm to drain the upper, most distensible portions of the ulnar and radial bursae. It should always be made at the side, never over the middle volar surface, for the pus lies beneath the flexor tendons. A median incision in such a case inevitably leads to fibrosis, destruction of tendons and frequently to operative or postoperative injury to the median nerve.

The middle palmar space is drained through an incision between the middle and ring fingers, extending from just above the web of the fingers to the middle flexion crease of the palm. The flexion tendons, digital nerves and blood vessels of the middle finger are retracted to the radial side and the corresponding structures of the ring finger to the ulnar side. The middle palmar space as it lies beneath the flexor tendons is then widely exposed. The incision for drainage of the thenar space is parallel to the margin of the web between the thumb and index finger, just dorsal to the web margin. A pair of forceps can then be forced into the abscess cavity as it lies beneath the thenar muscles.

Drainage of wounds with gauze or tubes, etc., is of no great importance. Properly placed incisions of adequate extent will take care of all drain-

age, at least after the first forty-eight hours. Plain gauze strips, vaseline gauze strips or glove rubber strips keep the edges apart for the first few hours. After twenty-four to forty-eight hours, they tend to prolong suppuration. Rubber tubes left in wounds frequently cause pressure necrosis, and if in a fascial space infection and happening to rest against a tendon sheath or a bursa, may convert a relatively simple case into a complicated one. The common habit of pressing and squeezing wounds to express contained pus, cannot be too severely condemned. It is unnecessary and harmful. Given sufficient drainage, the pus will drain out. Pressure simply further scatters the infection, forcing it past barriers laid down by nature. *Subsequent dressings* should be made with greatest care to prevent contamination of the wound with other types of organisms. Sterile instruments should be used and so far as possible, an aseptic technic.

Large hot moist dressings should be maintained about the hand and arm until the inflammatory process is under control. It may then be dressed in various ways, weak alcohol, or alcohol and glycerine, equal parts. In the presence of a foul discharge, 1/2000 potassium permanganate or Dakin's solution, is useful.

During the course of treatment, the hand, wrist and fingers should be placed in the "position of function." This favors most satisfactory use. The fingers should be slightly flexed, the hand in the "cock-up" position, the thumb abducted and rotated so that the flexor surface of the thumb is opposite the flexor surface of the index finger.

#### THE FINLEY HOSPITAL CLINICO- PATHOLOGIC CONFERENCES

#### JUGULAR THROMBOSIS FOLLOWING TONSILLAR INFECTION

F. P. McNAMARA, M.D., Dubuque

Thrombosis of the internal jugular vein following tonsillar infection was described by Mosher<sup>1</sup> in 1919 but its clinical significance was not generally appreciated until recently. Thus, Nussbaum<sup>2</sup> found only fifty-eight cases reported in the literature prior to 1927. The following case abstracts illustrate some of the main features of this condition of which Mosher<sup>3</sup> in 1929 stated "thrombosis of the internal jugular vein from tonsil infection still takes its weekly toll under the guise of septicemia of unknown origin."



## CASE 1

*Chief complaint:* The patient, a white girl, eighteen years of age, was treated outside the hospital because of a high fever and prostration following incision and drainage of a peritonsillar abscess.

*Post history:* She had been subject to frequent attacks of tonsillitis but otherwise had been well.

*Present illness:* About ten days before she had had an attack of acute tonsillitis and after a few

septic type gradually rose to 107 degrees. The prostration increased and she died on the twelfth day of her illness without definite localization of symptoms.

*Clinical diagnosis:* Probable septicemia.

*Autopsy 129:* At autopsy, the right internal jugular vein was found to be thrombosed. A thrombus was also found in the right auricle. There were numerous septic infarcts (abscesses) in each lung (Fig. 1) and each pleura was covered by patches of fibrinous exudate. There were 75 c.c. of seropurulent fluid in the pericardial sac and the serous surfaces were faintly granular.

## CASE 2

*Chief complaint:* The patient, a white man, twenty-eight years of age, was admitted to The Finley Hospital, November 19, 1931, with a complaint of "shortness of breath."

*Family and past histories:* Negative.

*Present illness:* Two weeks before he had had an acute, streptococcic sore throat which lasted five days. He then had a chill and a pain in his chest on breathing. At that time he had moist râles throughout each lung and the next day the entire right lung was consolidated. He also coughed up sputum tinged with bright blood. On the morning of admission he became dyspneic and cyanotic, and he developed signs of fluid in the right chest and edema of each lung. On aspiration of the right chest, foul smelling pus was obtained and he was advised to enter the hospital.

*Course in hospital:* On aspiration of the right chest 100 c.c. of foul pus were obtained. Thoracotomy was done and free drainage of pus resulted. In spite of this he continued to run a septic temperature varying between 99 and 103 degrees. Cultures of the sputum and pleural pus showed staphylococci, streptococci and pneumococci. He failed progressively and died on the sixth day in the hospital.

*Clinical diagnosis:* Right empyema.

*Autopsy 131:* At autopsy, approximately 1,000 c.c. of thick pus were found in each side of the chest. Each lung was covered by a thick layer of fibrinous exudate and each showed multiple infected infarcts (abscesses) (Fig. 2). The jugular vein was not examined because of restrictions but no other vessels were found to be thrombosed.

## CASE 3

*Chief complaint:* The patient, a white woman, sixty-five years of age, known to be a diabetic, was admitted to The Finley Hospital, May 6, 1933, in coma.

*Family and past histories:* Irrelevant.

*Present illness:* The day before admission she

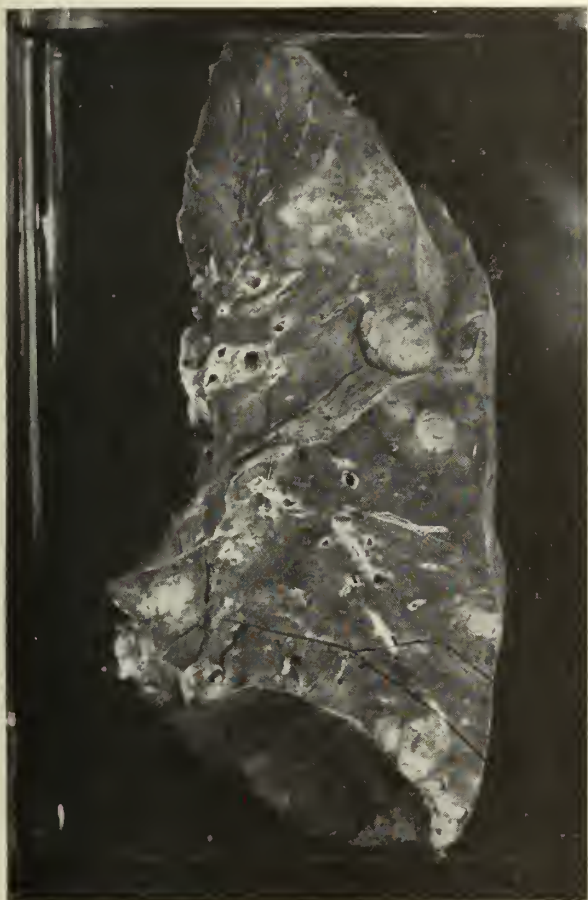


Fig. 1. Photograph of a museum specimen of the left lung showing multiple infected infarcts (abscesses). (Case 1; Autopsy 129).

days a right peritonsillar abscess developed. This was incised with marked improvement for two days. She then developed a chill with a high temperature and became markedly prostrated.

*Physical examination:* The patient was well developed and nourished. Aside from the chest the general examination was negative. Numerous snapping râles were heard throughout each lung but no definite areas of consolidation could be made out.

*Subsequent course:* In spite of general supportive treatment the temperature which was of a

developed a severe sore throat and on the morning of admission went into a coma.

*Physical examination:* The patient's temperature was 97 degrees, the pulse 140, and the respirations 38 per minute. She was in deep coma. The tonsils were still intensely red and swollen. The general examination was otherwise negative. The urine showed six per cent sugar, strong tests for acetone and diacetic acid; 50 mgs. of albumin per 100 c.c., and an occasional granular cast. The blood sugar was 500 mgs. per 100 c.c.



Fig. 2. Photograph of a museum specimen showing multiple infected infarcts. (Case 2; Autopsy 131).

*Provisional clinical diagnosis:* Diabetic coma.

*Course in hospital:* The temperature rose to 102.4 degrees in four hours and remained at that level for five days. It then fluctuated between normal and 102 degrees. The respirations varied between 30 and 40 per minute. The pulse fell from 140 to 88 per minute. The coma was overcome by large doses of insulin (150 units in twelve hours). However, with reduction of the insulin the patient tended to become comatose again. An x-ray ex-

amination of the chest showed a shadow in the left upper lobe interpreted as a probable pneumonia. The sediments of daily urines showed some variation. At times they would be free of leukocytes but at irregular intervals numerous leukocytes and a few red cells appeared. A blood culture showed non-hemolytic streptococci. An x-ray of the chest taken the day before death showed an increase in the lung shadow. The patient died nineteen days after admission.

*Final clinical diagnosis:* Diabetic coma and lobar pneumonia.

*Autopsy 180:* The upper lobe of the left lung showed one moderately large abscess and two smaller ones just beneath the pleura. There were small abscesses in the lower lobe of the right lung. There were multiple infected infarcts (abscesses) of each kidney, and each renal pelvis contained pus. The pancreas showed hypoplasia of the islands of Langerhans. The neck organs were not examined because of restrictions.

#### CASE 4

*Chief complaint:* The patient, a white man, seventy-seven years of age, was admitted to The Finley Hospital, June 18, 1933, with a complaint of "a sore throat."

*Present illness:* Two days before admission his throat became sore. When admitted he was running a septic temperature varying between 100 and 103 degrees. The sublingual and salivary glands were also swollen and tender. Aside from the fact that the liver's edge was two fingers' breadth below the costal border nothing else was found on general examination. The patient was a particularly well preserved man.

*Course in hospital:* The soreness of his throat and the swelling of the salivary glands diminished and he felt much better after five days. His temperature was still fluctuating between 100 and 103 degrees but it was decided to allow him to go home. Smears and cultures of his throat showed staphylococci and non-hemolytic streptococci. Two days later he suddenly became blind and was returned to the hospital. On readmission his temperature was 102 degrees. Aside from the blindness he complained of generalized aching and especially headache. There was also generalized abdominal tenderness but no rigidity. Examination of the eyes showed a little purulent exudate over the conjunctiva, widely dilated pupils and edematous discs. A spinal puncture was essentially negative but it gave his headache some relief. An x-ray of the skull showed chronic maxillary sinusitis. The liver's edge was three fingers' breadth below the costal margin and tender. The patient did not



seem dangerously ill. His temperature fell to 99.2 degrees in the morning and then rose to 102.1 degrees in the afternoon. He ate a food supper and then complained of abdominal pain. His pulse became imperceptible and he died in forty-five minutes.

*Clinical diagnosis:* Undetermined.

*Autopsy 186:* On opening the peritoneal cavity 1200 c.c. of fluid blood gushed forth. There were clots of blood in the upper portion of the cavity. In searching for the source of the hemorrhage, a large bleb-like mass filled with recently clotted blood was found on the lower surface of the liver. On dissection the liver parenchyma was softened and a thrombosed hepatic artery was found at one side of the infarct. A thrombus was also found in the right internal jugular vein and microscopically this was undergoing organization. The thrombus in the liver was infected. The brain showed edema and well marked arteriosclerosis. No infarcts were found.

#### COMMENT

In each of the above cases there was a history of a recent tonsillar infection. In the first two the individuals were young and gave definite histories of chills coming on a few days after the onset of the "sore throat." In the diabetic patient the course of events was obscured because of the onset of the coma. While the lung abscesses may have been due to aspiration of infected material, the thrombosis of the jugular vein is the more likely diagnosis. In the last case an embolus must have passed through the heart and lungs and entered the hepatic artery resulting in the infected infarct of the liver. Thrombi were demonstrated in the internal jugular vein in the first and last cases. Judging from the clinical histories and the post-mortem findings we believe thrombosis had occurred in the other two cases. The reader will find a full discussion of the pathology, diagnosis and treatment of the condition in the articles cited in the bibliography.

I wish to express my appreciation to Doctors W. Cary, F. W. Meyers, A. B. Nesler, and H. E. Thompson of The Finley Hospital staff for the use of their clinical histories in the above cases.

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#### AMERICAN MEDICAL GOLFERS PLAY IN ATLANTIC CITY MONDAY, JUNE 10TH

The American Medical Golfing Association will hold its twenty-first annual tournament at the Northfield Country Club in Atlantic City on Monday, June 10, 1935. The Northfield Country Club of Atlantic City is described by Chairman Conaway as "certainly one of the most interesting courses in this district. Many championships have been held at Northfield, and I am sure the visiting doctors will be delighted with it in every sense of the word. It has a beautiful club house with every facility ready for the pleasure of the guest."

Thirty-six holes of golf will be played in competition for the seventy trophies and prizes in the nine events. Trophies will be awarded for the Association Championship, thirty-six holes gross, the Will Walter trophy; the Association Handicap Championship, thirty-six holes net, the Detroit trophy; the Championship Flight, first gross, thirty-six holes, the St. Louis trophy; the Championship Flight, first net, thirty-six holes, the President's trophy; the Eighteen Hole Championship, the Golden State trophy; the Eighteen Hole Handicap Championship, the Ben Thomas trophy; the Maturity Event, limited to fellows over 60 years of age, the Minneapolis trophy; the Oldguard Championship, limited to competition of past presidents, the Wendell Phillips trophy; and the Kickers Handicap, the Wisconsin trophy. Other events and prizes will be announced at the first tee.

All male fellows of the American Medical Association are eligible and cordially invited to become members of the A. M. G. A. Write the executive secretary, Bill Burns, 4421 Woodward Avenue, Detroit, for an application blank.

Participants in the A. M. G. A. tournament are required to furnish their home club handicap, signed by the secretary. No handicap over 25 is allowed, except in the Kickers (Blind Bogey). Only active members of the A. M. G. A. may compete for prizes. No trophy is awarded to anyone who is absent from the annual dinner.

#### UNIVERSITY OF ILLINOIS ALUMNI LUNCHEON

Alumni, faculty members and friends of the University of Illinois College of Medicine are planning a luncheon to be held at twelve o'clock noon, Wednesday, May 22, during the state meeting of the Illinois Medical Association at Rockford, Illinois. Dean D. J. Davis will be the principal speaker. For those who have not kept in touch with the College of Medicine, an illustrated talk, showing the physical equipment and facilities of the college buildings, will probably be a highlight of the meeting.

The proximity of Rockford to Chicago, Wisconsin and Iowa will undoubtedly produce an unusually large attendance at the luncheon. Dr. Maximillian J. Rubeny, president of the Alumni Association, will be in charge of the luncheon. Dr. W. L. (Jeff) Crawford of Rockford is the general chairman in charge of the local committee making plans for the event.

# STATE DEPARTMENT OF HEALTH



## SMALLPOX MUST GO

The committee on Child Health and Protection and the State Department of Health will present a joint exhibit at the Eighty-fourth Annual Session of the Iowa State Medical Society to focus attention on the problem of smallpox. An amateur motion picture will be shown in which the "multiple pressure" method of vaccination is demonstrated, and the lesions typifying the "primary" and "immune" reactions throughout the course of the vaccination appear in natural colors. Posters will be used to compare the prevalence of smallpox in this state with its incidence in a group of six eastern states including New York, Massachusetts, Vermont, Pennsylvania, New Jersey and Connecticut. With the exception of Vermont, all states comprising this group enforce some form of compulsory vaccination law or ordinance.

The membership of the Committee on Child Health and Protection includes R. H. McBride, M.D., Sioux, City, chairman; Lee F. Hill, M.D., Des Moines; E. D. Plass, M.D., Iowa City; H. E. Farnsworth, M.D., Storm Lake; and J. F. Gerken, M.D., Waterloo. Representatives of the State Department of Health will assist those doctors with the explanation of the information presented. It will pay you to spend fifteen minutes of your time in visiting our booth.

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## TYPHOID CASES AND CASE RECORDS

Every physician who sees cases of communicable disease has an unusual opportunity to make significant contributions of an epidemiologic nature. This statement applies in a special way to typhoid fever. What is more interesting and essential in a case of typhoid fever than to determine by all possible means the source of infection? If the source remains undiscovered, the probability is great that infection

sooner or later will continue to propagate. The success which attends efforts to account for the manner of spread of infection, depends very largely upon the information which is obtained and made available by the attending physician.

Although typhoid fever is a rare disease compared with its prevalence or incidence in former decades, cases reported in Iowa in 1934 numbered 286. This number exceeded that of any recent year since 1929 when reports of 288 cases reached the State Department of Health. For the first three months of 1935, reported cases of typhoid fever totaled 29 as compared with 13 for the same period a year ago.

Through the interest and cooperation of attending physicians and local health officers, information on case record forms relative to 233 of the 285 cases reported in 1934 was forwarded to this department or obtained in connection with field investigation of typhoid outbreaks. A more detailed analysis of these records will appear in the next number of the JOURNAL.

Personal observation of typhoid cases and a study of typhoid case records, emphasize the importance of the human element in the spread of this disease. For this reason it is well to give attention to the household in which a case of typhoid fever exists and to make inquiry as to the past history of typhoid infection in members of the household. Is an insanitary toilet regarded as having caused the spread of infection? If so, the specific discharges doubtless came from a human carrier. Is infection regarded as having been of fly-borne nature? Back of this method of spread is the human element. Does evidence point to well water? If so, contamination probably had its origin or source in a typhoid case or carrier. Did exposure to infection apparently result from close contact or through contamination of food? Here again, it is likely that an infected individual played the leading part. The physician, who in his



analysis of a case of typhoid fever, gives chief thought to the human relationships which existed during the weeks immediately preceding the onset of illness, will be likely to have the satisfaction of having solved a rather baffling problem. At the same time he will have made an unusual contribution to the public health of the community.

PUBLIC HEALTH MEASURES IN THE  
CONTROL OF SYPHILIS

The above title is that of an article by C. F. Lehmann, which appeared in the Texas JOURNAL OF MEDICINE for December, 1934. Volume 30, page 529. The following abstract of this article is taken from the March, 1935, number of "Venereal Disease Information," a bulletin issued by the United States Public Health Service:

"The private physician feels no responsibility to society or to the patient for the control of syphilis until the patient comes to him for treatment. There are certain not very common practices of physicians that should be stopped. In most instances they are due to ignorance and call for the education of the physician. Some of these practices are: (1) Cauterization of a chancre, or the application of drugs that will jeopardize a satisfactory dark-field examination; (2) failure to recognize the signs of a chancre; (3) giving antisyphilitic drugs to a patient with a genital sore before a definite diagnosis has been made, thus creating doubt whether to continue thorough treatment, or to stop—in either event the patient is left in doubt as to whether he has syphilis; (4) treating according to the reaction to the Wassermann test without giving any consideration to the fact that continuous treatment over a long period of time, regardless of what periodic blood tests show, is the most important factor in the therapy of syphilis.

"If the private physician did no more than treat thoroughly patients in the primary and secondary stages of syphilis, the spread of the disease could probably be checked since this would prevent the majority of new infections. Such control will never be gained unless the dark-field examination is more widely used and the principle of effective medication over a sufficient period of time to arrest the disease is more generally applied.

"Physicians cannot be expected to furnish free treatment for all patients with syphilis, and no physician feels a responsibility to society so keenly as to do this. 'Unless organized medicine acts in some way to eradicate syphilis, then sooner or later, the State will enter in to control the disease, as it should control anything for the common welfare. There is the possibility of this step being a wedge to promote State medicine in general. If physicians are at all interested in the preservation of individualism in the practice of medicine, without which there is no incentive to advance and without which medicine cannot maintain its high standards, it seems to me that the problem of syphilis control would be a matter of extreme interest to them.'

"The responsibility of improving public health and controlling communicable diseases rests upon the State. In syphilis control there is the added duty of lowering the cost of maintenance of those made indigent by syphilis. The most effective way of doing this is to reduce the incidence of neurosyphilis and congenital syphilis. The most effective means of preventing neurosyphilis is by the adequate treatment of early syphilis. The number of children born with congenital syphilis can be greatly reduced by the treatment of syphilitic women during each pregnancy.

"The State can exercise better control by educating physicians and the laity, by providing better facilities for dark-field examinations and serologic studies, and by providing social service workers."

Frederick J. Swift, M.D., Deputy Commissioner.

PREVALENCE OF DISEASE

	March '35	Feb. '35	March '34	Most Cases Reported From
Diphtheria . . . . .	40	33	27	Scott-Des Moines
Scarlet Fever . . . . .	367	372	352	Guthrie-Woodbury
Typhoid Fever . . . . .	15	6	3	Wayne-Humboldt
Smallpox . . . . .	9	12	37	Buena Vista
Measles . . . . .	5,509	5,640	884	Jasper-Dubuque
Whooping Cough . . . . .	60	47	222	Dubuque-Woodbury
Cerebrospinal				
Meningitis . . . . .	8	10	10	Woodbury
Chickenpox . . . . .	233	196	307	Woodbury-Jasper
Mumps . . . . .	689	776	367	Dubuque
Poliomyelitis . . . . .	1	3	1	(Wapello)
Tuberculosis . . . . .	36	32	32	(For State)
Undulant Fever . . . . .	7	5	22	(For State)
Syphilis . . . . .	121	122	131	(For State)
Gonorrhea . . . . .	140	154	160	(For State)

# The JOURNAL of the Iowa State Medical Society

ISSUED MONTHLY

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## MEDICINE

### A Profession or a Trade

It has been aptly said that, "Coming events cast their shadows before them." If we are to forecast, then, the fate of medical practice in this country, it is necessary that we measure the shadows cast by trends in practice at this time. It would appear that American medical practice is following closely in the footsteps of medical practice in England. If we study the trend of medical practice in England we inevitably reach the conclusion that medicine and medical practice has, to a large extent, lost its time honored position as a profession and is assuming the unenviable position of a trade. Those ideals of practice, which centuries ago established medicine in the class of professions, are being engulfed in the flood of socialistic economics. Whether this trend is due to influences within the profession, or influences from outside, need not be discussed here, since only the results, as shown in the steady march toward state medicine, reveal the tendencies of the times.

Initiated and fostered by public-spirited physicians the public health movement in this country and in England seems to offer the entering wedge of government control of medical practice. From its inception, the administration of public health activities was conceded as a proper activity of the government. Insidiously, and perhaps rightly, the government has assumed a more complete control of public health administration and, with the widening of this field to include preventive therapeutics and in some instances (as with tuberculosis) the treatment of disease, they have ap-

proached at least the actual control of medical practice.

In the trend of events our English colleagues seem to be about a decade ahead of us in this country. They have already seen the adoption of compulsory health insurance and the institution of the panel system. They have watched the growth of governmental control, and a vast majority of the physicians in England have realized the necessity of cooperating with the plan.

In 1916 the municipal health authorities in England formed an association known as the Medical Practitioners Union, having the essential features of a trade union and designed to protect its members in their civil service rights. Already recognized as governmental servants, the formation of this trade union by those physicians employed in public health administration created but mild interest in the profession at large. This step, however, appears to have been the entering wedge for the profession into a more extensive practice of unionism, since we are now advised that early in December nearly four thousand members of the Medical Practitioners Union in England completed in fact their swing to unionism by joining the British Trades Union Congress, the equivalent of the American Federation of Labor. We are not acquainted with the motivating reasons for this complete affiliation with unionism, but it would appear that this group at least has relinquished its claim to professionalism and accepted the designation of tradesmen. Will medicine in America follow a similar course? President Roosevelt has openly declared himself in favor of some form of medical insurance similar to the British system, which now includes about one-half of England's practicing physicians on insurance panels. A recent statement from Dr. Charles Brook, a London County Councilor, is definitely significant of the trend of British medical practice. "The time is not far distant when the present panel system will be brought within the scope of the state medical service, and when those now engaged in panel practice will become full-time servants of the state."

Last month the Bronx County Medical Society officially went on record as favoring and recommending a complete socialization of medical practice wherein every physician would be employed by the state. We do not wish to assume the rôle of a pessimistic prophet, but would again cite that, "Coming events cast their shadows before them."



### **SURGERY OF THE SYMPATHETIC NERVOUS SYSTEM**

Showmanship, so outstandingly characteristic of the surgery of a former generation, has been replaced by science. Modern surgery has been built upon the rugged foundation of anatomy, pathology and physiology. Occasionally, however, the surgeon pioneers, and science follows. This has been the case to a certain extent in reference to surgery of the sympathetic nervous system.

During the past decade, numerous daring surgeons have performed various operations upon the sympathetic ganglia and nerves, while only in recent years has the work of the anatomist, the pathologist and the physiologist furnished the fundamental science with which to explain the results obtained. Here, empiricism led the way. Brilliant as are the results obtained with certain forms of surgery of the sympathetic nervous system, others are useless or definitely dangerous. New forms of therapy unfailingly entice the untutored, the inexperienced and the inefficient to open doors through blundering determination which should remain closed until the mastery of science and skill offers a key. The pendulum of enthusiasm usually swings too far. This newer surgery of the sympathetic nervous system apparently offers no exception to the rule, and will surely be discredited and handicapped through abuse unless its practice is limited to those possessing both science and skill in this work.

Apparently, the principles underlying successful surgery of the sympathetic nervous system are based upon either the production of local tissue asphyxia or the destruction of afferent nervous tracks eliminating the sensation of pain. Brilliant results have followed carefully planned operations upon the autonomic nervous system in peripheral vascular diseases such as thrombo-angiitis obliterans, and in Raynaud's disease. Equally gratifying results have been achieved in certain visceral disorders such as Hirschsprung's disease, dysmenorrhea and various cases of bladder distress. On the other hand, the efforts directed toward relief of scleroderma and arthritis have resulted in bitter disappointments.

Even in the hands of the most skilled, this form of surgery is approached without assurance and with proper respect. Certainly during this developmental period, surgery of the sympathetic nervous system should be left to individuals thoroughly versed in those underlying anatomic, pathologic and physiologic principles which recent studies of the sympathetic nervous system have

revealed, and to those sufficiently skilled in the surgical technic required in these delicate operations. It is apparent that the general or occasional surgeon will not be warranted in attempting operations upon the autonomic nervous system until our knowledge of the subject is much broader and our experience in this group of cases much more complete.

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### **DANGEROUS DRUGS**

On several occasions in this and other medical publications, a definite warning has been sounded against the use of certain drugs which have been shown through recent investigation to produce definitely harmful effects on the human organism. A recent news release of the United States Department of Agriculture calls to public attention, dangers, which have been medically proved, in the use of cinchophen and amidopyrine. Cinchophen is sometimes used as an anodyne or a sedative, and may be found in certain preparations recommended for the relief of neuralgia, rheumatic pains, neuritis and similar conditions. Amidopyrine is frequently found in headache remedies and other pain killers.

It is pointed out that current medical literature contains many reports which indicate that a gradual but serious poisoning from the use of these drugs may result, and if not readily recognized may not only produce illness but also cause death. Cinchophen creates a degeneration of the liver cells. Amidopyrine disturbs the function of the tissues producing the white blood cells, resulting in a condition which we recognize as agranulocytosis.

Physicians who resort to proprietary preparations must know the complete and exact formula of the preparations used if they are to avoid pitfalls such as is pointed out in the use of cinchophen or amidopyrine. This danger would be minimized or completely removed if the physician would prepare his own prescription formulas and not prescribe those of a questionable or unknown composition concocted by a pharmaceutical supply house. The layman may be protected by a careful study of the label on a proprietary package, but since the Federal Food and Drugs Act does not require the content of these proprietary concoctions to appear upon the label, the only safe way would be for the layman to write the Department of Agriculture or the American Medical Association for the desired information.

### CHILD DEVELOPMENT AND PARENT EDUCATION CONFERENCE

June 17, 18 and 19, 1935, are the dates for the Ninth Annual Iowa Conference on Child Development and Parent Education to be held in Iowa City, Iowa. The health of the young child will be the main consideration of the lectures and round tables during the three day conference. All sessions will be open to anyone interested in child development. There will be no registration fee. The Iowa Child Welfare Research Station and the Extension Division of the State University of Iowa will direct the program, cooperating with the Iowa State Council for Child Study and Parent Education, Iowa State College of Agriculture and Mechanic Arts, and Iowa State Teachers College. This conference is held in conjunction with the Eighth Health Education Conference of the American Child Health Association to be held in Iowa City, Iowa, June 19 through June 22. On June 19, with both conferences in session, the two programs will be arranged jointly.

In addition to faculty members from the State University of Iowa College of Medicine who will participate in the program, the following distinguished guests will be present:

Dr. Frederick Allen,

Director of the Child Guidance Clinic, Philadelphia, Pennsylvania.

Dr. Vivian T. Thayer,

Educational Director of the Ethical Culture School, New York City

Dr. Miriam Van Waters,

Superintendent of the Reformatory for Women, Framingham, Massachusetts (formerly Referee in the Juvenile Court, City of Los Angeles).

Dr. C. E. A. Winslow,

Professor of Public Health, Yale Medical School, New Haven, Connecticut.

Dr. John E. Anderson,

Director of the Institute of Child Welfare, University of Minnesota, Minneapolis, Minnesota.

Dr. J. H. Kinnaman,

Director of Child Health and Health Education, Iowa State Department of Health, Des Moines, Iowa.

For further information address Iowa Child Welfare Research Station, State University of Iowa, Iowa City, Iowa.

## THE OPEN FORUM

### ABORTIVE TREATMENT OF OTITIS MEDIA

Editor, Iowa State Medical Society  
Des Moines, Iowa.

Dear Sir:

You will find enclosed a short article on the early treatment of otitis media. Since textbooks on the ear do not mention abortive treatment, and since it has materially reduced ear complications in my practice, I thought you might like to use it in the JOURNAL.

B. L. Knight, M.D., Cedar Rapids.

Any treatment for early otitis media, that will reduce pain and complications is worthy of consideration. For some years, I have followed the dehydration method of treating otitis media, if the case is seen within a few hours of onset. Since the treatment is so simple and can be used by any physician in any location, and the results so satisfactory in preventing the condition from developing until the drum bulges (paracentesis then necessary) its more universal use by the general practitioner is advised. The treatment is based on the well known fact that edema of the eustachian tube prevents the middle ear from draining in the usual manner. Nature's way of opening the eustachian tube is opening the mouth wide or swallowing. A child with a head cold, allowed to cry thus opening the passage to middle ear, *while lying on his back*, will very likely develop ear trouble. Points of interest in regard to the dehydration treatment are as follows:

1. Give no liquids until twelve hours after the pain has gone. Forcing fluids by hot drinks, etc., causes more edema of the infected membranes. If this treatment does not help in twenty-four hours, the drum will be bulging and when this occurs, it should be opened at once.

2. Give a saline cathartic with as little water as possible.

3. Immerse feet and legs in hot water to draw blood from head.

4. Have the patients open their mouths as wide as possible every few minutes.

5. A crying child must be placed face down, or held in an upright position as long as he continues to cry. He should not be allowed to lie on his back at any time.

6. Ten per cent phenol in glycerine may be dropped in the outer ear.

7. Dehydration of the tube by the use of ichthyol and glycerine, or magnesium sulphate by posterior nasal packing or by dropping into nose, are never used until the above has been given a fair trial.

8. The drum should be watched carefully; if it bulges, the operation should be performed at once. This abortive treatment rarely produces the desired results after the drum has reached the bulging stage.

We will appreciate receiving reports from those using this treatment with all cases classified as requiring surgery, rupturing spontaneously, or being failures.



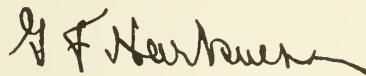
## OFFICIAL CALL



*To the Officers and Delegates for the 1935 Meeting of the  
Iowa State Medical Society:*

The House of Delegates will convene for its first meeting at 3:30 p. m., Wednesday, May 8, at the Masonic Temple, Davenport, Iowa.

Any member of the Society is welcome to attend the meetings of the House of Delegates but only certified delegates and Society officers have a voice in the proceedings.

A handwritten signature in dark ink, appearing to read "J. F. Hartman". The signature is fluid and cursive, with a long, sweeping underline.

*President.*

## SPEAKERS BUREAU ACTIVITIES

### IN APPRECIATION

As the date for the annual meeting of the Iowa State Medical Society approaches, the Speakers Bureau Committee feels that an expression of the sentiment contained in many of the letters received by the Bureau is due to the members of the State Society who have so aided the work of the bureau through their loyal cooperation. While these men have been notified individually in each case, a general summing-up may be of interest to the Society as a whole.

The following excerpts from letters are only a few from the vast number received:

"Dr. ———'s talk was very much appreciated, and pleased a most hypercritical audience. We have received many favorable comments."

"Talk was very well received. A splendid speaker with pleasing personality which holds attention of audience. An excellent talk on above subject."

"Talk was very much appreciated by those present. We are very sorry for the small crowd."

"In behalf of the Grinnell Community Hospital, I wish to thank you for your very great help to us in presenting our course of public lectures on health. We feel that the lecture course, which came to an end just a week ago, was quite successful, and are hoping to make this an annual service to the community on the part of the hospital."

"In behalf of the club women of ——— county, I wish to thank the State Medical Society for sending Dr. ——— to our county convention. His talk was very much enjoyed and the women appreciate the courtesy extended them by your society."

"Talk was very favorably received, and we appreciate Dr. ———'s kindness in driving in such weather to deliver it."

"I wish to say that we could not have asked for any better talk. At the present time, when there is so much contagion in our community, it opened our eyes to many phases of health situations in our communities, and to the value that women's clubs could be in reporting different cases of contagion to our local health physician. Speaker was very kind in answering questions."

"I want to thank you for arranging the program of last Tuesday. The speakers did very well, and they were greeted by a large crowd. There was certainly no lack of interest in the subjects, and we are very much pleased to have been allowed to have the group."

"Dr. ———'s talk was very well received, and made a deep impression on the students, as they are still quoting some of his points."

"The fellows are enjoying the course very much, and it is highly successful."

"The program was very well received, the papers were good, and there were many favorable comments on the program. It seems to me to be a very good plan, and sometime in the future we will be willing to cooperate if you wish us to."

"I wish to thank you for the excellent program which was presented to the ——— County Medical Society by ———. We of the Society feel that this type of program should be more extensively used, not only for its cultural value but also for its social possibilities, as new faces and new places get us out of the rut. If ——— county can be of assistance in the future, give us a call and we shall try to help out."

"The course is being received most enthusiastically. Dr. ——— gave us a splendid lecture last evening."

"The course is going over very well. The men are most enthusiastic about it."

These are only a few of many similar comments received by the Speakers Bureau. Fortunately the criticisms received are far outnumbered by the favorable comments. The praise for the work is due those doctors who have filled the assignments, and thus made possible the work of the Bureau. Their cooperation is recognized and appreciated, and at this time the Speakers Bureau Committee wishes to thank them publicly for their many kindnesses.

### HEALTH ESSAY CONTEST

The winner of the second annual health essay contest sponsored by the Woman's Auxiliary to the Iowa State Medical Society and the Speakers Bureau Committee was Miss Mary Ellen Oldag of Paullina, Iowa, a student in the eleventh grade. Winner of second place was Miss Lenora Jones of Davenport; and of third place the winner was Miss Lena-Belle Allen of Perry. The following received honorable mention:

Gladys Cook, Bennett, Iowa; Esther Landdeck, Grafton, Iowa; Jack Pinta, Manly, Iowa; Ada Hayes, Oskaloosa, Iowa; Denise Ingraham, Sewal, Iowa; Mary Lou Goerring, Council Bluffs, Iowa; Cyril Salsbury, Charles City, Iowa; Rose Murphy, Jamaica, Iowa; Georgina Sterling, Washington, Iowa; Lorraine Wagner, Monona, Iowa; Juanita Hanson, Hubbard, Iowa; Marjorie Stevenson, Milton, Iowa; Virginia Dolan, Dubuque, Iowa; Marjorie Steen, Johnston, Iowa; Charles Lovett, Lineville, Iowa; Lyda Kelly, Oakville, Iowa; Robert Jamison, Ottumwa, Iowa; Robert Clark, Arthur, Iowa; Wilma Watters, Dallas, Iowa; Freeda Martin, Montezuma, Iowa.

Students in all of the high school grades and from every section of the state wrote on the subject of "Disease Prevention and Health Protection." Only the three best essays from any one school could be entered in the contest. These were sent to a central committee composed of representatives of the Department of Public Instruction, the State Department of Health, the Speakers Bureau Committee, and the Woman's Auxiliary. This central judging committee read the essays and awarded prizes on the basis of originality, composition, and evidence of study.

Miss Oldag, the winner, was given a trip to Ames to read her essay over WOI on April 24. Officers of the Woman's Auxiliary met her there, and introduced her to the radio audience.



# WOMAN'S AUXILIARY NEWS

*Edited by the Press and Publicity Committee*

MRS. OLIVER J. FAY, *Chairman*, 405 Thirty-seventh Street, Des Moines

## Health Protection and Disease Prevention\*

ESTHER LANDDECK, Grafton, Iowa

Laughingly looking up at me from the front page of our newspaper one morning was the picture of a young girl of about sixteen. She seemed to be fairly bubbling over with vitality and health. When I found that she was the 4-H National health champion, I eagerly read the editorial about her, and from then on I was one of her most ardent admirers. Although I had never seen her or knew anything about her otherwise than what I had read, I don't believe that I shall ever forget that picture of health.

Well may those prize-winning 4-H girls and boys be proud of their healthy bodies, and of their ability to keep them healthy. Why is it so often the case that many who were born with healthy bodies are now in a run-down, nervous condition, in ill health, have bad teeth, bad eye-sight, and many other physical defects, yet others who were born with the same healthy body, today are health champions of the nation. Let us, instead of just wondering why, go below the surface and find out the cause of sickness, and the reason so many people lose the healthy bodies with which they were born.

Many things are brought before our eyes in relation to the building up of a healthy body and the preserving of it. The first of these is habits. Habits can be the building up of a character, and so habits can also be the building up of health. In all these habits the one great essential is cleanliness. Cleanliness should predominate, not only in one or two of our habits, but in everything we do in our daily life, be it work or play. Let us study some habits necessary to health. I have not sufficient space to go into the subject of how these habits may be formed, but I shall attempt to explain how habits help to build up and protect health and to prevent disease.

The food habit is the most important of these habits. How often have people suffered from diseases which might have been prevented if they had eaten the right kind of food! Form the habit of refraining from pastries and other confectioneries and you will before long have no desire to eat them. Wouldn't you feel a greater self satisfaction if you would train yourself to refrain from foods which do not in any

way build up your health, but are rather detrimental? Don't you think it would be interesting to find out by your own efforts which foods contain the necessary health-building elements, and then to learn to like and eat them? Why don't you try it?

Eating the right kind of food is a big item in health protection, but do you think you would be gaining a great deal if the food you ate were not clean? Cleanliness cannot be valued too highly. Everyone knows that countless deaths are caused by diseases which originated in unclean foods. These diseases are almost all avoidable and yet we remain careless in keeping the food clean. Make it a habit to see that your food comes from a clean place if it is possible to do so, that your hands, the dishes used, and everything involved in preparing the food and eating it is clean. In so doing you will be preventing disease germs from getting into the food and so protecting health.

Then there is the sleep habit. To eat right would do you no good if you did not sleep right. So form the habits of going to bed at an early hour every night, throwing your window wide to let in the good fresh air, and you will find it no trouble at all to rise early in the morning feeling fresh and ready to face the days' work. Regular and sufficient hours of sleep should be fixed habits.

Exercise and recreation are often undervalued by many people. During your sleep the waste of the day is repaired and new energy is stored up, but it is exercise which invigorates and sends your blood tingling to make use of that stored up energy. Without exercise and recreation you will become sluggish and dull. The result of a few minutes daily of vigorous exercising, such as exercising before an open window, a brisk walk, or some outdoor sport, would more than repay you for the time and effort you put forth.

"All that is very well and good," say some people, "but what do mental habits have to do with health?" Let us look at a person who constantly worries, a pessimistic person. Such a person is not inclined to be healthy. Worry brings nervousness, and nervousness causes other physical disorders. How much better for your mind, your body in general, it would be if you would make it a habit to always look at the

\* This essay was awarded honorable mention in the second annual health essay contest sponsored by the Woman's Auxiliary. The essay which took first place has been read over Radio Stations WOI and WSUI.

bright side of life and cheerfully do your part. This habit combined with the other habits we have discussed must sooner or later result in a bright, alert mind, and a healthy body.

And now, before you lay this paper away and perhaps forget about it, let me ask of you, "Have you read carefully, and have you thought about what you have read?" After all, it is the simple rules of health, which you have learned in your schoolwork since you were a child, that are the basis of health. Do we need new and modern rules for our health protection? Times may change, but the fundamental health rules remain the same. It is for this reason

that I have centered my essay around the simple rules of health. I have centered it around you, the reader, because I think health protection and disease prevention should first be individual work. There are books and books written on this subject, developing plans for the school, the home, and other places. So I have taken the simple rules of health and applied them to you, the reader, and indirectly to these places, in whichever ones you happen to be. Molding these things together, I have attempted to develop a plan which will appeal to you and be convenient to follow. I wish you the best of success in your efforts toward good health!

## SOCIETY PROCEEDINGS

### Cerro Gordo County

The regular monthly meeting of the Cerro Gordo County Medical Society was held in Mason City, Tuesday, April 9. We were very happy to have a number of doctors from neighboring counties as our guests. The scientific program consisted of an address on Eczema in Children, by Tobias L. Birnberg, M.D., assistant professor of pediatrics, University of Minnesota College of Medicine, St. Paul. About fifty doctors were present and a lively discussion followed the paper.

H. W. Morgan, M.D., Secretary.

### Cherokee County

L. J. Spinharney, M.D., of Cherokee, addressed members of the Cherokee County Medical Society at a regular meeting held Monday, April 16, at Sioux Valley Hospital. Dr. Spinharney spoke on Hydramnios.

### Dubuque County

Two Chicago physicians, both associated with the Cook County Hospital, presented the scientific program for the Dubuque County Medical Society at a meeting held in Dubuque, Tuesday, April 9. Following a six-thirty dinner, C. H. Warfield, M.D., gave an illustrated lecture on Bone Tumors and Allied Bone Lesions; and Arthur H. Conley, M.D., spoke on Bad Results in Fractures and How to Obtain Them.

### Floyd County

Members of the Floyd County Medical Society assembled for their regular monthly meeting in Charles City, Tuesday, April 23. Clark N. Cooper, M.D., of Waterloo, addressed the group on Modern Treatment of Burns; and F. Harold Entz, M.D., also of Waterloo, spoke on Treatment of Gonorrhea and Its Complications.

### Harrison County

On Wednesday, April 3, the Harrison County Medical Society met in regular session in Missouri Valley.

R. H. Cutler, M.D., of Little Sioux, and C. S. Kennedy, M.D., of Logan, presented a symposium on Obstetrics, and moving pictures of the subject were shown.

### Johnson County

At the regular meeting of the Johnson County Medical Society, held Wednesday, April 3, in Iowa City, M. E. Barnes, M.D., delivered an unusually interesting address on The Practical Aspects of Epidemiological Studies.

Horace M. Korn, M.D., Secretary.

### Linn County

The next meeting of the Linn County Medical Society will be held at the state hospital in Independence. Robert A. Stewart, M.D., superintendent of the hospital, will present interesting case histories, demonstrating the different types of hereditary psychoses.

### Marion County

The Marion County Medical Society held a dinner meeting at the Boylan Cafe in Knoxville, Friday, April 5. T. C. Denny, M.D., of Des Moines, Medical Director of Iowa Emergency Medical Relief, was guest speaker. He explained the Iowa medical emergency relief plan to the members and the guests, the latter of whom were representatives of the dental profession, the county board of supervisors, and the staff of the county welfare office. At the close of the meeting the society as a body agreed to carry on under the plan.

### Sac County

Monday, April 29, members of the Sac County Medical Society met at Early. Dues were received from the one remaining man who had not been an active member, thereby making Sac County one hundred per cent. Guest speakers were W. K. Hicks, M.D., of Sioux City, who spoke on Transurethral



Prostatic Resection; and Ronald H. Martin, M.D., also of Sioux City, who read a paper on Endocrinology. Great interest was manifested by the listeners, and free discussion followed. The next meeting will be held in May in Odebolt.

J. R. Dewey, M.D., Secretary.

#### Warren County

Three members of the Dallas-Guthrie Medical Society furnished the scientific program for the Warren County Medical Society at a meeting held in Indianola, Tuesday, April 2. W. R. Van Duzer, M.D., of Casey, spoke on Diseases of Old Age; C. M. Porter, M.D., of Woodward, read a paper on Physical Death; and M. H. Brinker, M.D., of Yale, discussed Obstetrical Anesthesia.

#### Iowa and Illinois Central District Medical Association

The regular quarterly meeting of the Iowa and Illinois Central District Medical Association was held Friday, March 15, at the Fort Armstrong Hotel in Rock Island, Illinois. One hundred and twenty-five members and visiting physicians were present for dinner at six-thirty, and two hundred and twenty-five members, visiting physicians and nurses, attended the scientific program at eight o'clock.

D. B. Freeman, M.D., of Moline, Illinois, read a paper on Fibroblastic Sarcoma of the Stomach; and Emil Novak, M.D., of Baltimore, who was guest speaker for the occasion, spoke on Sex Differentiation and Intersexuality. E. D. Plass, M.D., of Iowa City, opened the discussion of Dr. Novak's paper.

#### Southwestern Iowa Postgraduate Medical Society

The regular monthly meeting of the Southwestern Iowa Postgraduate Medical Society was held Thursday, April 18, in Atlantic, with the following program: Tuberculosis in Adults, John C. Parsons, M.D., of Creston; Tuberculosis in Children, Lee Forrest Hill, M.D., of Des Moines; and Heredity as a Factor in the Occurrence of Insanity, Marvin Sukov, M.D., of Clarinda.

#### PERSONAL MENTION

Dr. David O. Holman, who was graduated from the State University of Iowa, College of Medicine in 1933, has located in Nora Springs. Dr. Holman comes direct from Rochester, New York, where he has just completed his internship at the Strong Memorial Hospital.

Dr. R. J. Jackman, formerly of Laurens, has moved to Rochester, Minnesota, where he will be connected with the Mayo Clinic.

Dr. F. A. Hennessy of Calmar, spoke before the Decorah Child Study Club, Tuesday, March 26, on "Newer Trends in the Treatment of Communicable Diseases."

Dr. E. C. Kepler, after practicing in Allison for eight years, plans to locate in Waverly about June 1.

Dr. Fred Smith of Iowa City, was a guest speaker for the St. Joseph Clinical Society at a meeting held recently in St. Joseph. Dr. Smith spoke on "Observations in Clinical Courses of Coronary Artery Disease."

#### DEATH NOTICES

Campbell, Howard Elmer, of Anita, aged seventy-one, died April 23, following an illness of several months due to aplastic anemia. He was graduated in 1891 from New York University Medical College, and at the time of his death was a member of the Cass County Medical Society.

English, Harry H., of Conesville, aged seventy-two, died April 2, after an illness of several weeks from heart disease. He was graduated in 1901 from Keokuk Medical College, College of Physicians and Surgeons, and had long been a member of the Muscatine County Medical Society.

Traverse, Isaac Wilsey, of Fort Madison, aged sixty-two, died April 12, as the result of a paralytic stroke. He was graduated in 1893 from Keokuk Medical College and at the time of his death was a member of the Lee County Medical Society.

#### HOSPITALIZATION OF THE MENTALLY ILL\*

Members of the House of Delegates and others have been solicited by Dr. John M. Grimes to purchase a book that he has printed purporting to contain the results of the study recently made by the Council on Medical Education and Hospitals of the hospitalization of the mentally ill in the United States. Such individual use of the Council's material is, of course, wholly unauthorized. A report prepared by Dr. Grimes when he was employed by the association was not published because in the opinion of the council and an advisory committee of psychiatrists and neurologists his conclusions were not supported by the evidence presented. Two partial reports that have already been published will be supplemented when further studies have been completed.

#### RADIO TALKS

Attention is called to the change in broadcasting time over WOI:

WOI—Wednesday at 7:15 p. m.

WSUI—Monday at 8:00 p. m.

May 1—The Mother in Mother's Day, E. D. Plass, M.D.

May 8—The Hospital in the Community, Robert E. Neff.

May 15—Medical Organization and What It Means, C. A. Boice, M.D.

May 22—Rickets, R. O. Hughes, M.D.

May 29—Modern Heroes in Medicine—W. W. Bowen, M.D.

\* Reprinted from The Journal of the American Medical Association, November 10, 1934, Vol. 103, p. 1457.

# HISTORY OF MEDICINE IN IOWA

*Edited by the Historical Committee*

\*DR. HENRY B. YOUNG, Burlington  
DR. FRANK M. FULLER, Keokuk  
DR. JOHN T. MCCLINTOCK, Iowa City

\* Deceased

DR. TOM. B. THROCKMORTON, Des Moines  
DR. WALTER L. BIERRING, Des Moines  
DR. WILLIAM JEPSON, Sioux City

## A History of Medicine in Jefferson County, Iowa

JAMES FREDERIC CLARKE, M.D., F.A.C.S., Fairfield

(Continued from last month)

Dr. Richard J. Mohr was probably the first Jefferson County physician to use a microscope in his practice. Even he used the instrument more in general microscopy than in his practical daily work. He organized a Microscopical Club in Fairfield and there came to be at this time (1882-1884) eighteen compound microscopes in this small town, probably more than in any other town in Iowa at that time. Dr. Mohr had a corresponding acquaintance with Dr. Robert Koch of Berlin, Germany, and Dr. Koch sent to him a stained specimen of the tubercle bacillus in 1883 which was exhibited at his Fairfield microscopic club meeting. Dr. Geeseka of Mt. Pleasant tells me that he first used the microscope in 1888, but only to a limited extent until 1893. Dr. Fair of Mt. Pleasant was "probably the first doctor in Iowa to use the microscope in his private practice" in 1875. He belonged to the American Microscopical Society, as did the writer in 1883. In 1883 only one doctor in Jefferson County was using the microscope in clinical examinations. Today it is a part of nearly every doctor's equipment.

The writer had the privilege, as a mere boy (in 1880), to be a protégé of Dr. Richard J. Mohr and he "assisted" him in a number of surgical operations. Dr. Mohr was a man of extreme neatness and orderly habits. His army experience had been extensive. His equipment was the best possible for that day. This was, of course, before the days of asepsis, and considered in retrospect the healing of Dr. Mohr's operative wounds is a never ending marvel.

As is well remembered the doctor would enter the sitting room of a patient's home; spread a clean towel on the center table; open his velvet lined instrument case and take from it the shining knives,

scissors and forceps, laying them in neat rows on the towel. The patient's face or limb and the doctor's hands were washed with soap and water. Then, a boy, myself, giving ether, the operation was deftly performed without other assistants. Each instrument was then carefully wiped clean and restored to the case. Because of Dr. Mohr's scrupulous neatness and cleanliness his wounds healed rapidly.

On another occasion we visited a patient in the country. There was an intercostal opening discharging pus. In this sinus was a "seton" of fat pork. The dressing consisted of removing the "seton" and replacing it by another piece of fat about  $\frac{1}{8}$  inch in diameter and  $3\frac{1}{2}$  inches long.

A boy friend of the writer shot himself through the wrist. Dr. Mohr put him to bed for ten days and kept a weak carbolic solution dropping on the wrist continuously from a suspended conically bottomed can. Great layers of white skin came away from the hand and the wrist but there was no inflammation and the hand is perfectly useful and not deformed today. Of course at that time the doctors did not open the abdomen. It has been a privilege for many of us to have lived in the pre-Listerian age and to have grown into this time of aseptic surgery when anything is dared. Do we not, at times, tremble when every doctor today, because of the safety assured patients by antiseptics, does so many grave operations? Thousands of patients, formerly lost, are now saved by surgery but under the name of surgery, today in rural practice, much harmful operating is done.

One amateur surgeon in one rural community has removed the appendix in typhoid fever, infantile paralysis and lobar pneumonia with abdominal pain. In the early days of "peri" and "paratyph-



litis" the best surgeons did not dare look at the bowels to see what was happening. Probably the chances of life are much better today, but more rigid supervision of hospital operations and checking over of pathologic specimens is to be desired.

The older citizens of Jefferson county have been able to follow the gradual spread through this western community of hygienic knowledge. The writer, as a drug store clerk, in the seventies sold many nursing bottle tubes. The favorite big tube had a bone disk next to the nipple so that it could not be swallowed. It had a perforated cork and an interbottle glass tube. The bottle could lie beside the baby and did not have to be held by the nurse. The sale of these uncleanable conveniences was coincident with the prevalence of "cholera infantum." Gradually sanitary nursing bottles have been adopted and all people have learned the essentials of sterilization and cleanliness.

It was the custom in Jefferson County from 1880 to 1890 and before to keep in the stores a bucket of drinking water for the convenience of clerks and customers alike. This water bucket was covered by a board on top of which stood the drinker's cup. The thirsty clerk lifted the bucket cover, dipped the cup in the water and drank, replacing the cup ready for the next user. The writer knows of one instance where a lady clerk in our best store followed in drinking a man who had mucous patches in his mouth. She developed a "chancre" on the lip.

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patches in his mouth. She developed a chancre on the lip. This was diagnosed as a cancer by her wise women neighbors. Fearing "the knife" the infected woman went to a "cancer specialist" in a nearby town and had a considerable portion of her lip removed by a "cancer paste." In 1880 in Jefferson County a common drinking cup hung by a chain at the well in every school yard and all children used it. At that time, and before, fly screens were uncommon and imperfect, and flies on the dining table were not looked upon with horror as they are today.

There is little wonder that "typho-malarial" fever was prevalent. A considerable part of a doctor's work then was treating typhoid and malarial fevers, and the differential diagnosis was then in doubt. Years later it was learned that Nature and not the doctor cured typhoid fever, and only recently that the doctor can prevent this fever from occurring.

An instance of the prevalent lack of the hygienic sense among the people of the early days is the following story: Dr. Fordyce<sup>60</sup> made a night call in the country and had to stay for several hours. The patient had a severe bronchitis and was using the family skillet for a sputum dish. When time came for breakfast the good wife emptied the skillet and cooked in it her bacon and eggs. Dr. Fordyce, who saw the preparation for the meal, lost his appetite; remembered an urgent appointment, and left the family alone for their food.

A homeopathic doctor of early Jefferson County history had as a favorite remedy for measles the small black pellets found in a sheep pasture. We are sure his patients got well as rapidly as those treated by the "allopathic" school of medicine.

It was true in the early days as it is today, that the doctor with the most profound knowledge was not always the one with the largest practice. The doctors who made the absurd statements above noted were honest, conscientious men who labored without stint for their patients and held the high regard of a large part of the people.

#### THE COUNTY MEDICAL SOCIETY

At some unknown date in Jefferson County a medical society was organized, but its records were lost and its early history is unknown, except for one resolution which it passed. On January 20, 1885, the Jefferson County Medical Society passed unanimously, resolutions favoring the legal regulation of medical practice in the state of Iowa. The delegates to the Iowa State Medical Society were directed to urge the general assembly to pass such legislation. A circular, asking cooperation, was

ordered sent to all the county medical societies of Iowa. This was possibly the beginning of an effort to regulate the practice of medicine in Iowa.

In 1890 the practice of medicine in Jefferson County was becoming modern. Lister's principles were being adopted in surgery, and medication was becoming more rational. Rarely was a patient bled, but the diet of typhoid fever patients was so limited that on recovery the patient had extreme emaciation. Malaria was comparatively rare but diphtheria was frequent and much dreaded. Dr. Calvin Snook, Dr. J. V. Bean, Dr. D. H. Worthington<sup>205</sup> of the regular school and Dr. Eugene Campbell,<sup>23</sup> homeopathic physician in Fairfield, and Dr. W. Fordyce in Glasgow were the leading doctors. They were all well educated men and did good work. Most of the major surgical operations were done by surgeons imported from the large medical centers, or the patients were sent to Chicago for operations. In April, 1890, Mr. Andrew Cassel, who had been bitten by a mad dog, was sent to Chicago for the Pasteur treatment for rabies. The treatment was successful. At that time Chicago was the nearest point at which this treatment could be given, and Mr. Cassel was the first person in Jefferson County to take the Pasteur treatment.

In 1901 an advanced case of infantile myxedema was treated in Jefferson County by thyroid feeding. This, as far as is known, was the first case so treated in Iowa (or in the west). The remarkable transformation in this twenty-one-year-old girl from an idiot to a normal woman led to ninety-four other patients being brought to Fairfield for treatment and a widespread adoption of this treatment for hypothyroidism which before had been neglected.

The Jefferson County Medical Society was "reorganized" on July 10, 1903. It has been impossible to find any society records prior to this date. The following notes represent all the important meetings and action taken by this society for the following years as shown by a careful study of the minutes. During 1903 about seven members were present at the meetings. In 1904 only one meeting was held; that of December to elect officers. In December, 1905, it was decided by resolution to withdraw all professional cards from the newspapers and for doctors not to allow their names to be mentioned in connection with accident cases. In April, 1906, the question of raising the fees for a city call from \$1.00 to \$1.50 was discussed. The general sentiment, led by Dr. Fordyce, was against such an increase of fees. The doctor's fee for a city call was 50 cents until long after the Civil War. From 1889 to 1910 it was \$1.00; from 1910 to 1919 the fee was \$1.50; after 1919 it was raised

to \$2.00. In the early days the maximum fee for a country call was \$3.00. Since 1889 the mileage was supposed to be fifty cents a mile one way. Often this was not charged.

Not until 1908 was there held a meeting of any size of the Jefferson County Medical Society. Then there were eleven doctors present and there was a printed program. In April, 1910, the county medical society adopted a resolution favoring a national department of health with a cabinet officer and copies of this resolution were sent to the Iowa senators and representatives.

The doctors were informed by the secretary of the society that the State Board of Health furnished diphtheria antitoxin to the druggists for free use. On December 9, 1910, it was resolved to hold a meeting with the dentists concerning a hospital. The meeting was held January 10, 1911, and Dr. Boice of Washington reported on his county hospital campaign in Washington. Dr. J. Fred Clarke was appointed to have full charge of the hospital campaign for Jefferson County.

On March 3, 1911, resolutions were passed opposing a special examining board for osteopaths. Quarterly meetings were then considered. These for the next year were held in the smaller towns of the county. The meetings during 1912 were held with Dr. S. K. Davis<sup>45</sup> at Libertyville, Dr. Bishop<sup>12</sup> at Glasgow, Dr. Sherlock<sup>168</sup> in Lockridge and Dr. Stephenson<sup>175</sup> at Libertyville. The doctors' wives were taken to these meetings. The most interesting note in the minutes of each meeting seems to be that there was "an excellent fried chicken supper." The meetings of the county medical society were in the main social or business meetings. At times papers were read on medical or surgical subjects, but the scientific work of this society throughout these years was negligible. On December 13, 1912, the secretary says: Doctors in county, twenty-three; eligible for membership, twenty; members of the society, thirteen.

The Jefferson County Hospital had at that date been established and the first "advisory committee" to the hospital board as noted by the secretary's minutes was: Dr. J. Fred Clarke, Dr. J. V. Bean, and Dr. L. D. James. On February 28, 1913, a resolution was passed, to care for the county poor in the hospital, free, each doctor to serve in turn.

On April 25, 1913, Dr. Bean objected to the approval of the last meeting's minutes because a homeopathic physician had been elected. Dr. Bean said he would, if the minutes were approved, prefer charges against this county society at the next meeting of the Iowa State Medical Society.

(To be continued)



# THE JOURNAL BOOK SHELF

## BOOKS RECEIVED

**ANNUAL REPORT OF THE SURGEON GENERAL OF THE PUBLIC HEALTH SERVICE OF THE UNITED STATES—**For the fiscal year, 1934. United States Government Printing Office, Washington, 1934. For sale by the Superintendent of Documents, Washington, D. C. Price, seventy-five cents.

**THE AUTONOMIC NERVOUS SYSTEM—**By Albert Kuntz, Ph.D., M.D., professor of micro-anatomy, St. Louis University School of Medicine. Second edition, greatly enlarged and thoroughly revised. Octavo of 697 pages, illustrated with 73 engravings. Lea & Febiger, Philadelphia, 1934. Price, \$7.50.

**BODY MECHANICS IN THE STUDY AND TREATMENT OF DISEASE—**By Joel E. Goldthwaite, M.D., Lloyd T. Brown, M.D., Loring T. Swaim, M.D., and John G. Kuhns, M.D. J. B. Lippincott Company, Philadelphia and London, 1935. Price, \$4.00.

**HOW TO PRACTICE MEDICINE—**By Henry W. Kemp, M.D., New York. Paul B. Hoeber, New York, 1935. Price, \$2.50.

**INTERNATIONAL CLINICS—**Volume IV, Forty-fourth Series. Edited by Louis Hamman, M.D., visiting physician, Johns Hopkins Hospital. J. B. Lippincott Company, Philadelphia and London, 1934. Price, \$8.00.

**MORTALITY AMONG PATIENTS WITH MENTAL DISEASE—**By Benjamin Malzberg, Ph.D., New York State Department of Mental Hygiene, Albany, New York. State Hospitals Press, Utica, New York, 1934.

**OBSERVATIONS OF A GENERAL PRACTITIONER—**By William N. Macartney, M.D. Richard G. Badger, Publisher, The Gorham Press, 100 Charles Street, Boston, Massachusetts.

**PERIODIC FERTILITY AND STERILITY IN WOMAN—**A Natural Method of Birth Control—By Professor Herman Knaus, head of the clinic for gynecology and obstetrics, of the German University of Prague. With 64 illustrations and 12 tables. Wilhelm Maudrich, Publisher, Vienna, 1934. Price, \$6.50.

**REPORT ON SEVENTH INTERNATIONAL CONGRESS OF MILITARY MEDICINE AND PHARMACY—**Held in Madrid, Spain, May-June, 1933. By Captain William Seaman Bainbridge, M.C.-F., U.S.N.R. George Banta Publishing Company, Menasha, Wisconsin, 1934.

**SURGICAL APPLIED ANATOMY—**By Sir Frederick Treves, Bart. Ninth edition, revised by C. C. Choyce, M.D., professor of surgery, University of London. Illustrated with 174 figures, including 66 in color. Lea & Febiger, Philadelphia, 1934. Price, \$4.00.

**THE YEAR BOOK OF GENERAL MEDICINE, 1934—**Edited by George F. Dick, M.D., Lawrason Brown, M.D., George R. Minot, M.D., William B. Castle, M.D., William D. Stroud, M.D., and George B. Eusterman, M.D. The Year Book Publishers, Inc., Chicago, 1934. Price, \$3.00.

**THE YEAR BOOK OF GENERAL SURGERY—**Edited by Evarts A. Graham, M.D., professor of surgery, Washington University School of Medicine. The Year Book Publishers, Inc., Chicago, 1934. Price, \$3.00.

## BOOK REVIEWS

### A TEXTBOOK OF SURGERY

By W. Wayne Babcock, M.D., professor of surgery, and of clinical surgery, Temple University, Philadelphia. Second edition, rewritten; 1,312 pages with 1,032 illustrations, eight in color. W. B. Saunders Company, Philadelphia and London, 1935. Price, \$10.00.

The first edition of this valuable treatise appeared in 1928. Designed to meet the requirements of the undergraduate student as well as the practicing surgeon, the text covered the entire range of surgical practice in sufficient detail to serve the needs of each group. During the past five or six years advances in surgical knowledge have required revision of the text. This new edition incorporates these advances together with corrections and revisions and many new illustrations which bring the text entirely up to date.

Percentage mortality rates are quoted for many operative procedures. This unique and valuable addition should appeal to the novice and the experienced surgeon alike. A thorough discussion of anesthetics and methods of anesthesia, so essential to successful surgery, is presented in detail. The surgery of the ductless glands has been completely revised, particularly as related to the thyroid, the parathyroid and the suprarenal glands. Much that is new in neurosurgery has been added.

While less than encyclopedic in scope, the work is complete, and vividly portrays the essential principles

and practice of surgery, making the volume most useful, both as a text and a reference book.

### DIETETICS FOR THE CLINICIAN

By Milton A. Bridges, M.D., associate in medicine, New York Postgraduate Medical School. Second edition, enlarged and revised; octavo, 994 pages. Lea & Febiger, Philadelphia, 1935. Price, \$10.00.

The immediate success of the first edition of this work has prompted the author to undertake its complete revision and the publication of this second edition. The scope of the work has been greatly enlarged and some eight hundred additional menus added. The section on pediatrics has been clarified, modified and extended, and more space is devoted to the dietary treatment of the diseases of children than in other works of a similar character. The section on vitamins has been completely revised and rewritten. Part II of the volume contains dietetic notes which should be of the greatest practical value to every practitioner. In this section will be found food adjuncts, including a scientific treatment of the tobacco question and tables of alcoholic beverages containing striking material from the most reliable and recent sources.

The new edition is based on scientific data, the most recent available, and is far more comprehensive, better organized and more efficient than the previous edition. The volume should prove useful alike to

the specialist in nutritional diseases, and the general practitioner.

#### ELECTROCARDIOGRAPHY

By Chauncey C. Maher, B.S., M.D., assistant professor of medicine, Northwestern University, and the Montgomery Ward Medical Clinics, Chicago. William Wood and Company, Baltimore, 1934. Price, \$4.00.

Dr. Maher's treatise on electrocardiography has two excellent features. The tracings are well selected, satisfactorily clear, and cover the field of abnormalities in an excellent manner. His explanatory diagrams are also very illustrative. The other feature is the placing of a detailed clinical diagnosis in juxtaposition to the electrocardiographic diagnosis, so that the beginner may not only learn how an electrocardiographic diagnosis is made, but also has an excellent opportunity to understand the meaning of the noted abnormalities.

His interpretations are orthodox; perhaps a bit too orthodox to suit some. Nevertheless, they are sound in the main. The descriptions of the principles involved in the tracings, as well as the significance of abnormalities are as clear and as lucid as these things can be made. The book will be valuable to the beginner, and as a reference work to the physician whose main interest lies outside the field of cardiology, but who nevertheless, wants to know "what the wild waves are saying."

D. J. G.

#### HUMAN ANATOMY—DOUBLE DISSECTION METHOD

By Dudley J. Morton, associate professor of anatomy, College of Physicians and Surgeons, Columbia University. Published in two volumes by the Columbia University Press, 2960 Broadway, New York City, 1934. Price, per set, \$6.00.

During the past few years there has been a growing tendency to reduce the amount of time devoted to gross dissection, largely due to the introduction into the curriculum of many additional subjects. To meet this changing condition, the double dissection plan was developed in the College of Physicians and Surgeons, New York, where the method is now a proved and established procedure. The plan is intended to present a 360 hour course of anatomy, carrying the student through two complete dissections of the entire body in a one year course. The two volumes presenting this plan are quite comprehensive and outline the complete scheme of dissection. The course includes the dissection of two cadavers. The first volume covers the dissection of the muscles and joints as well as the bony architecture. The second volume covers in detail the dissection of the vascular system and nerves. Both volumes provide spaces for drawings and notes. Each step in the dissection is completely explained, references are given, and spaces

are allowed on which the student may check his knowledge of each part of the dissection. The work shows every evidence of being a distinct advance in the teaching of anatomy and should furnish a valuable text for any school that can afford to provide two cadavers for each individual student.

D. M. B.

#### HUGHES' PRACTICE OF MEDICINE

Revised and edited by Burgess Gordon, M.D., associate professor of medicine, Jefferson Medical College, Philadelphia. Fifteenth edition, with 61 illustrations. P. Blakiston's Son & Company, Philadelphia, 1935. Price, \$5.00.

Popular for nearly a generation this abridgement of the Practice of Medicine now appears completely revised in its fifteenth edition. In it the physician will find brief accounts of the essential and outstanding symptomatology, pathology and treatment of all diseased conditions discussed in more extensive works. The arrangement follows closely that of larger standard works.

While it is readily appreciated that all of the details of typhoid fever, for example, cannot be written in eleven pages, or syphilis of the liver on one page, still the authors of this compact volume do demonstrate that it is possible to epitomize the essential points of diagnosis and treatment in this compass. No practicing physician should attempt to dispense with a condensed treatise of this nature for reference purposes.

#### TREATMENT BY DIET

Clifford J. Barborka, M.D., department of medicine, Northwestern University Medical School. Illustrated. J. B. Lippincott Company, Philadelphia and London, 1934. Price, \$5.00.

During the past few years the public has become diet conscious, and many freak and faddish diets have been proposed and widely recommended. In appreciation of the many excellent results obtained by the properly controlled and properly balanced diet, especially in the diseases of metabolism, greater and more careful attention has been paid to dietary management by progressive physicians. Most large hospitals have developed well controlled dietary departments, and published texts and dietaries have been released from these several sources.

This volume appears much more complete than the usual work of this nature, and should appeal especially to the practicing physician, the dietitian and the student of the subject. The author is especially to be commended upon his rational approach to the problem and his evaluation of food portions by sight measurement rather than by weight, although he fully appreciates and stresses the importance of a weighted diet in diabetes, particularly where insulin is employed.



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### GROUP ORGANIZATION\*

GORDON F. HARKNESS, M.D., Davenport

Mr. Toastmaster: It isn't difficult to address meetings away from home; one can get away with a great deal, but when you are called upon in your own city, you have to be mighty careful. I do, however, want to take this occasion to add to Dr. Ott's words of greeting to you yesterday, and tell you how glad we are to have had the privilege of holding our state meeting here.

Serving this organization during the past year has been an honor for which I shall always be truly grateful. The examples of the unselfish devotion by so many members of our organization to the problems of medicine, educational and economic, is an inspiration to anyone to try and do a little better himself. This is not the time to reiterate the accomplishments of the past year. When you begin a job, you have aspirations, you shoot at the sun and may hit a star. As you go along you begin to realize that even needed changes do not come, as it were, overnight, but that constant effort gradually brings success, a sort of evolutionary process. When your task is done, there isn't any purpose in talking very much; you can't put halos where they don't belong; it's the record that counts and it speaks for itself.

This is the one occasion, however, when I can most properly express the appreciation of this organization to the representatives of the allied professions who are our honored guests tonight. Our economic problems lead us to legislative problems. The officers of the allied professional group, of dentistry, nursing, veterinary medicine, and pharmacy, have given their fullest cooperation to us up to the limits of their official prerogatives in our legislative efforts. The two latter organizations who have been in annual session since the first of the year were kind enough not only to invite me, as your representative, to be their guest, but also gave me time to present our legislative problems before

their respective groups. In addition to this, opportunity was given to present the idea and advocate the formation of an allied professional organization. This is now assured and there is no reason to doubt but that the nursing profession will become a component part of this organization. A word may not be out of place as to the reasons for such an organization. It is unfortunate in our body politic as it exists, that proposed statutory enactments cannot be judged by our legislative assemblies on their individual merits, and approval or rejection be made on that basis. The formation of so-called blocs may be deplored, but it seems to be becoming more and more of a necessity if results are to be accomplished. By joining forces with the other groups, who with ourselves are most cognizant of public health needs, we are in a position to wield a greater legislative influence than if each group were to work individually.

May I add what seem to me to be certain prerequisites to be kept in mind. An allied professional group is primarily a mutual association in which the participants must decide as to the formalities of the organization. There should be no desire to submerge the individualities of any one of the participating groups. While we feel that the political organization of our body politic fails to recognize merit without political pressure, we should keep in mind that as an allied organization, we can only be mutually cooperative in furthering those measures which have as a basis the public welfare. No one group should be expected to pledge their support to measures which are primarily motivated by the selfish interests of another group. Lastly, if we as physicians expect such an organization to relieve us of individual responsibilities, we can only fail. Our success in finally having passed a fairly satisfactory healing art practice act, was due primarily to the educational campaign that was carried on last summer and fall within our own group.

The exigencies of our economic and political life today demand group organizations. We have

\* Remarks of the President at the Annual Banquet of the Iowa State Medical Society, Davenport, May 9, 1935.

the group organization, and the success of the group organization depends on how its members accept their own individual responsibility in that group. And that, ladies and gentlemen, means you and me.

### THE POWER OF ORGANIZATION\*

THOMAS A. BURCHAM, M.D., Des Moines

I want to express my appreciation of the honor you have bestowed upon me in electing me President of the Iowa State Medical Society. I assume the presidency tomorrow fully realizing the time and work necessary to carry on the duties of that office. During the past two years, and particularly the last year, many problems which have required the united and concerted action of the society have presented themselves; and on many occasions the solution was accomplished through the able leadership of our President, Dr. Gordon F. Harkness. The officers and committee members have been most responsive and tireless in the exercise of their duties. Through the course of the coming year we may expect many more problems and although it seems popular to turn to a dictatorship, I assure you that I do not want to assume such a position, but rather wish to be a servant of the society.

At the present time the government is more or less running the banks, the railroads, the factories; and industry in general has been regimented with codes of all kinds. These changes truly constitute a "new deal" for the people of the United States. What influence will these federal activities have on organized medicine? Are we to assume that our profession is immune; or that it, too, will be regimented; and if so, what part will we have in the formation of our code?

Personally I am not such a pessimist that I think this country is "going to the dogs" and that we are going to be fed with a spoon, but I do feel that now is the time for organized medicine to act, and act as a unit in order that we may take our place in the discussions and have a part of the new organization of affairs, not leaving our code to others. If we do not write our own code some non-medical group will write it for us. There is still a place for individualism; intelligence, thrift and industry will continue to pay bigger dividends than ignorance, indigency and shiftlessness. Certainly we cannot expect to continue the steady progress we have made in the past if the incentive for obtaining rewards for services well rendered is taken from us.

Communism will not be established in this country, nor will our constitution be scrapped, but society itself will change the present form of the practice of medicine and we should be ready and willing to help formulate new ideas to the advantage of the individual doctor as well as organized medicine. Socialism in medicine will not come from the government; it will come from the dissatisfied members of our profession who will be unwilling to be guided by the action of the majority. Dr. Walter L. Bierring, President of the American Medical Association expressed this sentiment in his address in Cleveland last June when he said: "It is sad to relate that mighty forces have been at work to sow the seeds of discontent in the ranks of organized medicine and to destroy the faith in that leadership which is based on the sacred traditions of sacrifice and devotion to the idealism of medical service."

How have the members of the profession in Iowa reacted to the proposals from outside forces? Our greatest line of defense has been our complete and thorough organization within the state; and our cooperation with the American Medical Association assisted in defeating sickness insurance. At least this item is not included in the program of social security before Congress at the present time, although it was previously in the "new deal" legislation. Other examples of the influence of organized medicine are:

1. The establishment of a system of state and federal medical aid to persons on relief in those Iowa counties which have exhausted their poor fund.

2. The response of the local medical societies in putting into operation plans for the care of persons on relief in those counties still able to carry themselves financially.

3. The power of united effort and thorough organization has been exemplified in the success of our state legislative program during the recent session.

There are many other activities which illustrate the influence and power of organized medicine but these suffice to show what organized medicine can do once it has a definite goal. The individual doctor with natural ability will come forward when given an opportunity and take his place along with those now in control of affairs, and will be in a position to offer methods and means of rendering service to the sick that will preserve and retain the permanent and confidential relationship between patient and physician. It shall be my aim to seek out such men in the profession; ask their counsel and advice; and, whenever possible, assign them to duty. These men, with their wisdom and energy, will be unable to accomplish our objectives

\* Remarks of the President-elect at the Annual Banquet of the Iowa State Medical Society, Davenport, May 9, 1935.



unless we are organized as a single unit and working for the same goal.

A threat to the economic independence of the medical profession is occasionally of real value inasmuch as it is conducive to the formation of solidarity. This fact is ably demonstrated by the response of the medical profession in this crisis. It has caused men to express themselves on economic questions and has resulted in plans for organization which will assure American medicine the continuance of that heritage which has come down through the generations and will preserve traditions and ideals long cherished in the development of an old and honored profession. With continued support of these ideals and a unity of purpose, we will survive and progress to still greater rewards than it has been our privilege to enjoy in the past.

### RAGWEED DERMATITIS

LOUIS J. FRANK, M.D., Sioux City

Contact dermatitis due to ragweed pollen has been recognized for many years and is well established, although there is a surprising dearth of literature on the subject. Hannah<sup>1</sup> and Sutton,<sup>2</sup> independently, in 1919 reported the first cases of this disorder. These early diagnoses were based on history, distribution of eruption, and the usual procedure of allergic investigation, the percutaneous and intradermal testing with saline extracts of the pollen. Following these papers little was heard of ragweed pollen dermatitis for many years. The impetus given to patch testing by Jadossohn and Block was soon manifest in Sulzberger and Wise's<sup>3</sup> report. These authors made a very definite advance in demonstrating instances of negative scratch and intradermal tests but positive results with the material applied to the intact skin. This important step produced a confirmatory check on clinical observations which of necessity were often speculative. Other cases were reported around this time. Brown, Milford and Coca,<sup>4</sup> whose theory has since been confirmed by others, made the next important step, proving that the dermatitis is caused by the so-called non-antigenic ether-alcohol soluble fraction of the pollen which is in no way related to the antigenic saline soluble fraction.

Therefore, at the present time we have ragweed pollen dermatitis definitely established as an allergic (in its broader sense) manifestation. It is, however, a non-atopic condition in that it is not subject to hereditary influence; the patient does not respond with immediate wheel and flare reaction to skin tests; and, reagin is not present in the blood. It may, of course, occur coincidentally in

an atopic individual possessing reagin to ragweed pollen. Several such examples have been studied, and these cases previously served to confuse the true nature of the condition. Fundamentally, ragweed dermatitis seems entirely comparable to rheus dermatitis.

The early attempts at treatment were along the lines followed in the hyposensitization of hay fever with saline extracts of the pollen. More or less uniformly favorable results were reported by this method. In the light of our present knowledge this favorable response more than likely was due to the pollen oil soluble in the saline extract. The pollen oil for treatment is now available on the open market, but practically nothing appears in the literature regarding its value. Prophylactically, Pascher and Sulzberger<sup>5</sup> state that their second case remained free of dermatitis for several years, the patient attributing this freedom to yearly pre-seasonal treatment of the pollen oil.

No reference has been noted in the reported case as to whether the plant itself, in addition to the pollen, contains the material to which these patients react. The following case is reported, not because it is deemed rare, but because these features may prove of interest.

#### CASE REPORT

K. H., twenty-nine years of age, sought advice January 13, 1934, concerning a "dysidrotic-like" eruption on the palms of his hands of five years' intermittent duration. This was interpreted as a dermatitis of external origin, and treated as such with satisfactory results. He was seen irregularly since that time with minor recurrences. On August 18, 1934, he returned with a new type of eruption. This was an erythematous-papular efflorescence on the arms and dorsum of the feet which began three days previously. On direct questioning, he stated that every summer since 1923 he had had a similar eruption, varying in intensity from year to year. It appeared some time between July and the latter part of August, persisting into the cold weather, usually with marked relief after frost. There was no personal or family history of atopic diseases.

The dermatitis became severe during the following week. The face, neck, arms and legs developed a slightly edematous erythematous-papular dermatitis with slight vesiculation, oozing and crusting. The palms of the hands, which had been clear for some time, now became involved with a diffuse eruption of deep "sago grain" vesicles. The itching was intolerable. Varied protective and soothing topical applications afforded little relief.

He was tested by the scratch method with numerous foods and inhalant allergens, including pollens. The skin was irritable to trauma, but no

wheel or selective flare was observed. Two hundred units (Stull and Cooke) of ragweed extract injected intradermally produced no reaction. The pollen of short and high ragweed was applied in the usual manner of patch testing, and observed forty-eight hours later. The short ragweed resulted in a sharply limited area of edematous infiltration and vesicles. The high ragweed developed only a few scattered papules and was regarded as inconclusive. He was then tested with twenty-two of the common air borne pollens of this vicinity with negative results. Attempts at passive transfer were unsuccessful.

The ragweed pollen oil for treatment was ordered but its receipt was delayed until September 12. The eruption during this time continued unabated. On this date, he was given one cubic centimeter of one per cent oil of mixed ragweed in almond oil (Lederle), intramuscularly. Forty-eight hours later, all activity of the eruption had subsided and he presented a dry, scaly erythema of the involved parts. The itching had completely stopped twenty-four hours after the injection. He was given a similar injection at this time, and was not seen again for two weeks. According to his statement, the itching remained absent for three days following the second injection, after which both it and the dermatitis returned to their original severity. On this visit, the eruption was again dry and scaly (we had a frost several days previously). Three weeks' dermatologic treatment with Lassar's paste, aluminum acetate packs, and autohemotherapy served to clear up this residual inflammation. This demonstrated the well known fact that following the removal of the cause the inflamed skin, because of its heightened irritability, frequently requires appropriate topical medication to enable it to withstand the ordinary everyday irritations to which it is subjected.

To determine whether or not the noxa responsible for the dermatitis was also present in the ragweed plant, portions of the leaf and stalk of short ragweed were washed with water and extracted with ether. The ether was evaporated and the sticky resinous extract taken up with a small amount of alcohol and applied to the patient as a patch test. A portion of the leaf of both short and high ragweed was applied to different sites. The plants and leaves used had already been killed by frost. Forty-eight hours later tests were observed. The patch of the extracted material had been loosened by exuding serum and was lost. The area was entirely denude of epithelium and surrounded by a palm sized plaque of intense dermatitis. This same material applied to my own arm for seventy-two hours had shown no evidence of irritation. The area to which the dried leaf of

short ragweed was applied showed a sharply limited area of papular and minute vesicular dermatitis comparable with that produced by the pollen itself. The area of the high ragweed patch was negative.

#### SUMMARY

1. The chronology of ragweed dermatitis is briefly outlined.

2. A case is reported. Treatment by intramuscular injection of one per cent pollen oil resulted in prompt favorable response with entire relief of subjective symptoms in twenty-four hours. The duration of this favorable response was for only three days after the second injection. It was not repeated because of the lateness of the season. Following the disappearance of the pollen from the air, three weeks of dermatologic treatment were required to clear up the skin.

3. This patient was sensitive to the common but not the high varieties of ragweed as indicated by patch tests. This was somewhat surprising in view of the fact that the evidence points to a lack of specificity of reaction to the atopic excitants of the ragweeds.

4. Positive patch tests were obtained with the leaf of short ragweed, and with ether extracted material of the leaf and stalk of short ragweed after the plant had been killed by frost. It, therefore, seems reasonable to assume that the plant contains the same noxa as the pollen. It is likely that contact with the plant before or after the pollinating season, and especially with the smoke so prevalent with the fall burning of weeds, would be a potent factor in producing trouble for these individuals sensitive to ragweed. It could well obscure a history of purely seasonal incidence. In view of the fact that Brown et al<sup>4</sup> reported fifteen per cent of sixty individuals tested with the pollen oil to be sensitive, this mode of contact by smoke and vapor of burning ragweed may be responsible for cases of obscure dermatitis in individuals able to tolerate the oil as encountered from the pollen in the air.

Since this work was completed Brunsting and Anderson<sup>6</sup> reported eighteen cases of ragweed dermatitis in which they also observed the specificity of reaction to short and high ragweed. They utilized the extracted material from the plant and leaf for patch tests. Coca, in discussion, says that he is now using for treatment the oil extracted from the leaf of the plant because this is much stronger than the oil extracted from the pollen.

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## MUCOUS COLITIS—ITS CLINICAL STUDY

CHARLES J. DRUECK, M.D., Chicago

In considering the symptomatology of colitis we must keep in mind that in many instances the patient is not conscious of its presence; in fact, he may consider himself in good health with the possible exception of experiencing some difficulty in evacuating the bowels. He may complain of stomach trouble, which is not stomach trouble but an intestinal disturbance resulting from colon stasis. Occasionally the symptoms may be of such a nature as to suggest appendicitis, cholecystitis, peptic ulcer, or renal calculus. In a few cases the patient complains of colicky pain and the passage of strings or membranes of mucus. These symptoms vary with the patient and in the same patient from day to day. However, these patients seek help not because of their bowel disturbance but for irregularities of the fecal evacuations, abdominal pain or backache, intestinal putrefaction, toxemia, lack of physical energy or mental depression. If mucous colitis is sought for only when there is abdominal tenderness and colic, the majority of cases will be missed; if it is sought for in every patient with colon dysfunction, or a psychoneurosis, it will often be discovered.

The clinical course of chronic colitis of a non-specific character may be divided into three periods.

1. A compensated period in which there are only slight symptoms of intestinal disorder with or without a minimum of the general reactions.
2. A period of development of the symptoms of colitis leading to the production of phenols and toxic bodies through intestinal putrefaction. This is manifested by the syndrome called auto-intoxication. Most of these patients also have hepatic insufficiency which adds to the fatigue and to the symptoms of nervous depression.
3. A period of disturbed equilibrium of the intestinal functions. This occurs in addition to the putrefaction and increases the patient's pain probably through an effect upon the vegetative nervous system.

The period of compensated colitis is more or less long and during this period the intestinal

trouble is not recognized by the patient. Abdominal discomfort is ever present; it may range in intensity from nothing more than a little soreness to paroxysms of the most distressing colic. A large number of patients never have colic, but it is not uncommon to find the intestine in an irritable state so that moderate cramps are easily produced by purgative drugs, at which times it is particularly sharp just before, during or following defecation; its location may be variable or constant. These patients feel pain keenly, and persistent, localized, apparently very acute pain, has caused many futile operations for cholecystitis, appendicitis and pelvic disease. This pain or soreness differs from that of ordinary colic in that it is made worse rather than relieved by abdominal pressure. At times, the whole colon is found tender. Sometimes, a period of constipation ends with the appearance of abdominal pain and flatulency leading to a diarrheal attack which brings relief to the sufferer.

Occasionally, I have seen pruritus ani, urticaria and angioneurotic edema complications which suggest either protein sensitization as a result of absorption of minute amounts of unchanged protein through the diseased bowel wall, or the possible absorption of some chemical found in the bowel. Histamine is at times a product of intestinal putrefaction, and when absorbed in sufficient amounts is capable of producing urticaria and angioneurotic edema. A test diet followed by a careful examination should be made in every case to locate the lesion and study the haustral contractions and spastic areas. Spastic portions of the colon always indicate regions of irritation and toxemia. Mechanical obstruction may be defined; also dilatation of the cecum, chronic appendicitis, angulations and strictures. During this early stage of colitis all the symptoms are attributed to overwork or ordinary dyspepsia.

Mucus is now noted in the stools. It may coat the fecal masses or be expelled as independent evacuations of yellow, brown or sometimes black jelly-like masses, or in more or less desiccated plaques, strings, ropes or scab-like membranes. The strings may be many inches in length and, on being tested out in water, prove to be casts of the bowels, or broad ribbons. Patients sometimes mistake them for intestinal worms. The mucus adheres tenaciously to the wall of the bowel, so that when encountered in the postmortem examination it is removed with difficulty, even with forceps. von Norden reports that he was unable to drive it off with a strong stream of water from a hydrant. Hence it is not uncommon to find blood spots on the expelled mucus, as if it had been torn away like a scab. As a rule, the

mucus bears only a few leukocytes and is without fibrin.

Besides mucus quantities of blackish or brownish, gritty, irritating intestinal sand are occasionally found. Some authors report the frequent presence of blood in the stools (Mummery found it in sixty per cent of his cases), usually when scab-like membranes come away. It is regularly present in cancer cases, and frequently with polyposis and hemorrhoids but in these cases the mucous colitis is not an important feature.

There is no body fever with colitis, but rather a subnormal temperature. This is probably because of the depressed vitality. When fever is present it usually results from a superimposed infection elsewhere. In many cases the stools are normal as to number and appearance. There is frequently constipation with or without false diarrhea. The presence of a stool each morning does not indicate that constipation is not present. The bad odor of the breath, the headache and the insomnia are usually attributed to the constipation. There is apparently nothing to indicate the need for an examination of the stools. If such an examination is made, a neutral or alkaline reaction is usually found. The ammonia content is often increased while the organic acids are rarely increased. Acetic acid or corrosive sublimate do not produce coagulation. Because of the colitis and the alteration of the mucosa, assimilation is disordered and the anaphylactic symptoms which could have caused the lesion become a result of it and thus a vicious circle is created. If overwork is avoided and if a proper diet is given, the patient may recover and the affection may disappear without there being any marked symptoms. If these measures are not carried out the patient will drift into the second stage.

In the second stage the pathologic condition of the intestine becomes more manifest. There is a sense of weight in the right iliac fossa and often pains at some point along the course of the colon. There is loss of appetite and the breath becomes foul. Abdominal palpation frequently reveals gurgling and a painful cecum, and a spasm of the left colon. The stools are moulded or pasty and are brown in color. They sometimes have a fetid odor with an alkaline reaction. *Entameba coli* are frequently found and in three-fourths of the cases the ammonia content is normal or increased.

The patient usually presents himself during one of the diarrheal attacks complaining of bloody stools. In the mild cases the blood-tinged mucus is voided only at the time of defecation, but in the severe cases there may be several evacuations, perhaps as many as ten each day, of quantities of mucus, associated with flatulence made worse by

partaking of hot drinks. After each diarrheal attack has subsided, the abdominal rest and constipation recurs. Examination of the urine frequently shows an increased elimination of phenols which is not masked by a compensatory diuresis. Signs of hepatic insufficiency frequently appear. The rôle of hepatic insufficiency in psychic disorders is well known and it still further increases the nervous reaction of the patient. In many cases at this stage the digestive disorders are not limited to the colon but the entire digestive apparatus becomes insufficient or disordered.

In the later stages a fermentative diarrhea with several yellow stools daily is the rule. The stools are acid in reaction and are accompanied by severe pains along the course of the colon. The bowel is hypersensitive and is easily palpated.

Mucous colitis is at times an accompaniment of surgical conditions that will render all medical treatment futile. Such conditions are pyorrhea alveolaris, purulent tonsils, infection of the nasal sinuses, a diseased gallbladder or appendix, an anal fistula, pelvic disease in either male or female, or a torn and lax perineum. It is also a manifestation of cancer or hyperplastic tuberculosis of the bowel, polyposis, diverticulitis, chronic intestinal amebiasis and the chronic dysenteries in general. Patients with severe mucous colitis do not stand surgery well and before one submits them to operation, attempts should be made to get them into as good condition as possible. Too often they have already had sundry gynecologic and abdominal operations which have left them in a worse state than before.

#### PATHOLOGY

The changes in the bowel are variable. The colon sometimes shows very slight alterations or even rarely no recognizable lesion, but usually the mucous membrane is more or less damaged. In some of the colons removed at operation, the mucous membrane of the cecum and ascending colon reveals universally distributed areas of inflammation, and the whole wall of this part of the intestines shows atony, dilatation and poor nutrition. In some cases, Keith has demonstrated the absence of the normal nerve elements of Auerbach's plexus with consequent cecal and colonic stasis. The colon is often redundant and looped, and there is sometimes laxity of the abdominopelvic walls with ptosis of the transverse colon and one or both flexures, with perhaps a movable cecum. Not infrequently the descending colon is found in a spastic state. When the patient presents himself for examination, we must be absolutely sure that he has mucous colitis. The first symptoms of an early malignancy, or ulceration



of the bowel, which may be either simple or specific, resemble closely those of mucous colitis, and many patients have been treated for mucous colitis until it was too late to operate for a malignant condition which really was the cause of the trouble.

The early recognition of colitis is of importance and we believe that a careful examination of the stools and sigmoidoscopic examination of the colon should be routine procedures in the examination of every case where it is at all possible. The mere presence of mucus in the stool, even when obtained by enema, is not sufficient evidence on which to base a diagnosis. There are cases in which the secretion of mucus is temporarily excited to a considerable degree by a simple enema, and may later disappear even though the enema is continued. This is due to the fact that there is a physiologic reaction on the part of the colon to the presence of the water, resulting in the secretion of mucus which soon ceases as the bowel becomes accustomed to the presence of the water. This fact should also be borne in mind in making the sigmoidoscopic examination, for the simple enema may cause a temporary appearance of congestion with an accumulation of mucus, which if subsequent local examinations are not made may lead to an incorrect diagnosis.

The only constant symptom of this disease is the passage of abnormal mucus per anum. Therefore the diagnosis rests on:

1. The patient's history of passing slimy stools, or the characteristic thick, very tenacious plaques, sheets, scab-like membranes, strings or ropes of mucus, which, though observed, patients commonly do not mention unless interrogated.

2. The finding of the characteristic mucus in a submitted stool.

3. The bringing in by the patient of strings of mucus, often in the belief that these strings are worms.

4. The detection of the characteristic mucus after a colon irrigation or enema, or even after a test dose of castor oil.

5. Least important, the observation through a sigmoidoscope of a dry or granular mucous membrane in the upper rectum to which are clinging the thick tenacious pieces of mucus.

It is to be borne in mind that mucus is the normal secretion of any mucous membrane, and therefore a little mucus clinging to a constipated stool or a fair amount of evidently freshly secreted mucus following a cathartic or obtained by enema or irrigation does not establish the diagnosis.

The habits of defecation vary with each individual, from the sluggish evacuation of large size produced only by the exhibition of cathartic

drugs or an enema and then accompanied by flatulency and colicky pains, to the other extreme where the individual has frequent soft, mushy or diarrheal movements or evacuations of enormous quantities of mucus. These attacks may occur so suddenly as to appear to be an acute disorder, but will usually be found to follow unusual nervous strain where the individual has overtaxed his physical or nervous strength. Sometimes this excessive expenditure is more or less continuous as in school study, domestic worry or business cares. It is, therefore, important that we make repeated, thorough examinations of the excretions in each and every case. Where the bacilli coli preponderate the colon is atonic with a flat, thin mucous membrane, having a dry surface. There is thinning of all the coats of the bowel, and the clinical picture of intestinal toxemia is obvious. Where the anarobic bacilli are found a saccharo-butyric fermentation is the rule, the mucous membrane of the bowel is moist, there is much mucus produced and the mucous membrane is hypertrophied. Here the bacillus aerogenes capsulatus is most often found. Lesions in the ascending and transverse colon are nearly always accompanied by much auto-intoxication, while those in the pelvic bowel, because of the dry feces and the lack of absorption, do not show toxemia. At all times our patient suffers with some of the popularly called symptoms of indigestion, namely: a coated tongue; gastric hyperacidity; intermittent achylia; lack of appetite; or dreamy sleep; and treatment is directed to these conditions when the real etiology is in the large intestine.

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#### TREATMENT OF PELVIC INFECTIONS\*

A. C. PAGE, M.D., Des Moines

A large percentage of all invalidism in women is due to pelvic inflammation. In this field as, in other types of illness, the modern correct treatment has developed through much trial and error.

During the first decade of this century I was connected with the gynecologic clinic in our medical school. At that time it was the practice to operate for removal of the fallopian tubes whenever a mass could be palpated. Little attention was paid to selecting a proper time for such operation. So great was the urge to treat these cases surgically then that I shudder to think of the wanton sacrifice of tissues that might have been conserved. It fell to my lot to care for many of

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these patients following such treatment. The comparative high mortality is a sad recollection. The high rate of infected wounds with drainage, fecal fistulae and long uncertain convalescence, created much doubt in my mind as to whether we were altogether right in our methods. Later watching these young women, unsexed by early radical operation, many of them invalids or semi-invalids, restless, nervous individuals, deprived of their right to lead the normal life of womanhood, I became definitely prejudiced against this line of treatment.

In 1909 Simpson published an article which marked a turning point in the care of such patients. In this article Simpson attempted to answer three questions; first, will operation always be necessary for complete restoration of health, comfort and functional activity; second, if operation is decided upon will the coincident occurrence of acute illness and operation entail more, or less, danger than their separate occurrence; and third, if interval operation is decided on by what means may we determine that a safe time has been reached. After discussing these three questions basing his conclusion on the results in some five hundred cases of his own and many from the records of others, the writer states he is firmly convinced that the "separate occurrence of acute illness and operation entails much less danger to life and a much lower percentage of postoperative morbidity than coincident disease and operation." He further states that this conclusion is reached "because the patient's reserve strength is materially reduced by acute illness of bacterial origin, again, interference with a focus of acute inflammation is likely to spread infection and materially increase technical difficulties."

The disease properly treated very rarely causes death. In the vast majority of instances it is possible for the patient to develop a degree of immunity which frequently does lead to actual internal sterilization of pus. The safe time to remove the products of inflammation is not at the height of the attack but after it has subsided.

Later in the same year, Crossen, after a thorough discussion of the subject, concluded that abdominal section in the case of gonococcal pus tubes may be safely undertaken after three or four months from the beginning of the trouble; but that in streptococcic infections operation for the removal of the product of inflammation is never safe. In this latter type of infection vaginal incision and drainage of pus may be necessary when located.

In 1927, Miller of New Orleans, reported the results of treatment in different series of cases. One series of 1500 cases showed a mortality of fourteen per cent in those operated upon during

the acute stage, and less than one per cent in what he called the "cooled" cases. He also shows in a study of six hundred operations for this disease that in the acute cases the morbidity following operation was much greater than in those where surgery was performed in the later stage. His conclusion was that under no circumstances would he operate upon a patient whose temperature had not been consistently normal for at least ten days during which period repeated vaginal examinations were made.

Curtis in 1921 reported a study of results of the investigation of fallopian tubes removed from one hundred ninety-two patients suffering from pelvic inflammation. Of these cases sixty-four showed gross evidence of active inflammation, thirty-eight showed histologic evidence of active inflammation, and ninety showed no evidence of active inflammation. Gonococci and streptococci were the organisms found in the very large majority. *Bacillus coli*, *bacillus proteus* and tubercle bacilli were present in only a few. From this study the author was able to conclude that the gonococcus lives but a short time in the tube. He stated, "persistently active gonorrhea of the tubes is evidently ascribable either to recurrence of infection from without or repeated invasion of bacteria from the chronically infected lower genital tract." When the invading organism was of the streptococcic group, on the other hand, evidence of active inflammatory process was sometimes encountered long after the introduction of the infection. Streptococci were occasionally isolated months or even years after the acute process had subsided.

This and other studies have shown that the gonococcus spreads along the mucous membrane through the uterus to the tubes. In fact this is the only pathologic organism which will spontaneously travel this course. On the other hand streptococci spread through the wall of the uterus to involve the parametrial tissues. It does not do this spontaneously but is introduced from without by some instrumentation or from infected material in the uterine cavity.

Pathology, as the result of infection with one or the other of these two types of pus organisms, differs then in several particulars. With the gonococcus extending along the mucous membrane the resultant inflammation is found mainly in the endometrium and endosalpinx. The tube swells and because of its weight drops down behind the broad ligament or uterus. If the inflammation spreads to or through the abdominal osteum, either the fimbriated extremity is drawn together, as with a purse string ligature, or becomes plastered to the ovary or the peritoneum of some of the con-



tiguous structures. The closed tube is at first filled with infective pus. In a comparatively short period of time this pus becomes sterile. Because the inflammation is more or less limited to the interior, the organs are never firmly fixed. With streptococcic infection spreading into the deeper layers and to the parametrium sometimes between the layers of the broad ligament to the lateral wall of the pelvis, the organs become firmly fixed by adhesions. Operations performed for these conditions have shown that adhesions in the case of streptococcic inflammation are much more firm than in gonococcic infection. A line of cleavage is comparatively easy to find in the latter, but very difficult to find in the former. These differences form the basis of the differential diagnosis between these two types of pelvic infection; mode of onset, location of the processes determined by bimanual examination and sometimes by demonstration of the germ.

The routine treatment in the acute stage of pelvic inflammation is absolute rest in bed until the temperature has been normal for about ten days. Pain is relieved by local applications, preferably ice bags, although opiates may be resorted to if necessary. Bowels are regulated by mild laxatives or gently given enemata. Fluids are forced by mouth, with proctoclysis or hypodermoclysis if necessary. Hot vaginal douches help to localize the inflammation and relieve pain. The value of intravaginal use of heat in such cases has led to the development of many methods for applying it. Panutin reported 2,676 cases of inflammation of the uterus adnexae in which treatment was by physiotherapeutic methods. The work was carried on in a hospital in Moscow. No fewer than thirty different methods or combinations for the application of heat in some manner were used. It is sufficient to say that all of these methods had the common purpose of applying heat through the vagina for resolving inflammatory exudates in the pelvis. The warm vaginal douche, medicated or unmedicated, is the simplest form. Diathermy has been used for several years where the apparatus and a skilled operator were available. With this method it has been possible to develop vaginal temperatures of about 115 degrees, while the oral temperature rose to between 101 and 104 degrees. The advantage of this technic is that it is possible to create marked elevations of temperature in the region of the pelvis with only a comparatively slight elevation of the temperature of the rest of the body. By this method it was shown that the period of rest in bed and convalescence was shortened. The only drawback to its use has been burns of the vaginal mucosa. Because of the rugae, uni-

form distribution of the heat is difficult. Serious burns have occurred at times in this way. The Elliot method of applying heat has been developed most recently and seems to be meeting with universal approval where it has been used. The apparatus for applying this consists of a rubber bag which can be inserted into the vagina and distended with a current of hot water maintained at a certain temperature and circulated by means of a small electric motor. The temperature of water and the pressure can be accurately maintained. The highest point that is safe is 130 degrees. The rubber bag smooths out the rugae so that the heat is evenly applied and burns are very rare.

Holden has observed that this temperature maintained in the vagina for one hour will produce a temperature of 106 degrees in the pelvic peritoneal cavity and 104 degrees in the bladder without disturbing the general temperature of the body. It causes an increase in leukocytes and a profuse discharge from the cervix and vagina.

Counselor reports results of treating some 42 cases by this method in the past year. His conclusion was that "a high percentage of chronic infections of the pelvis can be cured clinically by the prolonged and sustained application of heat to the vagina, the Elliot technic being used." Some small percentage, however, will require operation because of the extent of the process and the involvement of other organs. Counselor also states that satisfactory results following operation can be obtained by the use of this method, beginning its routine use on the fifth postoperative day.

Foreign protein injections for the treatment of chronic pelvic inflammatory masses have been used for a number of years with benefit. When these were first used the general reaction with high temperatures was the rule. Of late these proteins have been prepared in such a way that these severe reactions do not occur. The results with the later prepared proteins seem to be just as satisfactory.

It would seem after this review of the literature and from personal experiences that there should be no difference of opinion as to the proper treatment of pelvic infection in women. However, a wider search of the journals discloses that articles are appearing from time to time expressing quite different views from those I have already quoted to you. Notable in this connection is an article in the British Medical Journal, September, 1923, written by Aleck W. Bourne. This author states that the proper time to operate is as soon as the disease is diagnosed suppurative salpingitis. He makes the operation conservative, if possible; that is, he opens the abdomen, slits the tube lengthwise and drains. In the discussion which followed

the reading of this paper the British surgeons seem to approve this method. It is my feeling that a follow-up of cases treated in this manner could not help but be disappointing. From time to time in this country views are expressed in print in favor of early operation. It is certain that in our own hospitals we see all too often patients subjected to surgical treatment at a time when the hazard is greatest and when such treatment calls for a greater sacrifice of tissue than would be necessary at a later date. Reasons for this are, perhaps, two-fold. In the first place when the sufferer is told that she has a disease from which she cannot expect to be cured for many weeks or months at best, she is likely to rebel and if the one who first makes the diagnosis refuses to offer her some quicker way out she will go until she finds someone who will operate with the promise of a quick cure. Again her physician may feel that the road to a non-operative cure is too long and too uncertain, and that he will not be able to retain the patient's confidence in him for that length of time. There may be economic reasons why a long semi-invalidism with treatment cannot be carried out by the patient. She may have to earn her own living and possibly those dependent on her. This is a very unfortunate condition, and one which we may not be able to meet as we would wish. A compromise such as palliative treatment for the shortest time necessary to make it reasonably safe, followed by surgery is, no doubt, the best solution here.

Can we then formulate some general rules for the care of these patients? If so, what are they? I will try and state my own conclusions. First, in all acute cases both gonococcic and streptococcic, rest in bed, local cold applications, sedatives or opiates as necessary, gently given enemata and other symptomatic remedies when needed; second, vaginal heat in the form of frequent douches with warm weak antiseptic solutions if other means are not at hand. Instead of the hot douches and preferable to them, diathermy or the Elliot method of heat application may be used. Such favorable results have been obtained lately with this latter mode of treatment that I feel it is the method of choice. In the subacute stage in lieu of the heat treatment foreign protein injections may be used and have given very satisfactory results. Probably eighty-five per cent of all the patients will secure at least symptomatic cures by these methods of treatment; fifteen per cent because of failure to respond to the palliative methods or because of involvement of other intra-abdominal organs will have to be operated upon.

In the gonococcic cases palliative treatment

should be carried out long enough for the active inflammation to subside. This subsidence may be determined clinically by watching the temperature curve. No operation should be performed until the temperature has been normal for at least ten days, during which period frequent vaginal examinations are made. It is probably safer to wait three or four months after the acute attack, and unless reasons of an economic nature or involvement of surrounding organs make it necessary, no surgery should be attempted. Only the products of the inflammation are to be removed. In the streptococcic cases the initial treatment is the same, also the follow-up with vaginal heat in some form. Operation here should only be with the idea of pus drainage by vaginal incision if the abscess can be located. Abdominal operation with removal of involved tissues here is fraught with great danger and should be avoided. As the streptococcic germ remains active in pelvic inflammation for such a long period there is no time at which radical operation is safe. It is best to limit surgical procedure to drainage, if possible. Usually the palliative type of treatment will be sufficient. Morrow has reported excellent results following the palliative treatment we have described, with bimanual massage for removal of adhesions, or making such adhesions so attenuated that the motility of the organs is in great part restored.

Many times the line of least resistance points to radical treatment in these cases when our better judgment would indicate the slower, less dangerous course. The highest success in the practice of medicine and surgery is the greatest amount of health and happiness that we can attain for our patients. Let us be equipped to follow the best indicated procedure and may we have the courage of our convictions to keep us to that course.

#### Discussion

**Dr. William H. Rendleman, Davenport:** Twenty-five years ago it would indeed have been presumptuous on the part of one interested in internal medicine to take up the discussion of pelvic infection. However, if eighty-five per cent of the cases are now curable by conservative methods, it naturally is of interest to the internist. When the speaker was an interne, previous to twenty-five years ago, and during his early years of practice when he tried to do some surgery, it was the custom to remove these tubes while red hot, and they were truly red hot in those days, apparently more so than now.

There are, in general, two types of pelvic infection, gonococcic and streptococcic. In the former the infection extends through the endometrium and along the mucosa to the tube, and a tubo-ovarian abscess forms which, due to its weight, falls back into the culdesac. These, when left alone until after the tem-



perature is normal for some days, become sterile. The other type, that due to the streptococcus, spreads through the uterine wall into the broad ligament and produces a parametritis. This brings about a firm fixation of the pelvic tissues. Sterilization is slow and perhaps never occurs. On examination of these cases, one finds firm, hard masses.

Before the papers referred to by Dr. Page, those of Dr. Crossen and Dr. Simpson, the treatment was radical. They advocated a conservative line of surgery. Since then the palliative method of treatment has been developed; that is, the use of rest, which should be absolute over a considerable period of time, the use of protein injections, and the application of heat in some form or other. The first mode of applying heat was by vaginal irrigations. Since then diathermy and the Elliot treatment previously mentioned have been used more extensively. The Elliot method, perhaps, offers the best conservative treatment. With this line of treatment, about eighty-five per cent of the sterile women are functionally cured, or, I should say, will not need operations. Of this number, of course, many remain sterile, but a large proportion may bear children. This is a consideration which certainly is of great value.

Economic considerations may, in chronic cases, warrant operations when otherwise these patients would get along without them. We know that these patients with chronic tubes are chronic complainers. They go from one physician to another and they do not have the patience to carry out any line of treatment. With these in the proper stage I would consider operation as the treatment of choice.

Dr. O. F. Parish, Grinnell: I want to commend the paper given by Dr. Page to your very earnest consideration. I read it over three or four times and then looked up many references before I was able to get the full meaning.

While the treatment of pelvic infection may be surgical, it is the one type of infection which should be treated very conservatively by the various therapeutic agencies as recommended by Dr. Page before operative measures are considered. Hippocrates knew considerable about the heat treatment in pelvic infection, but for a thousand years it was forgotten. Then a German physician conceived another principle, which was a great advance over anything used at that time. That was the distention of the vaginal cavity with hot shot. This was rather an heroic measure, but doubtless had done a great deal of good. At the present time this is being applied in a much better form; namely, the Elliot method. Before that, distention of the vaginal cavity with various methods, using hot water to supply the heat, served its purpose very well. Let us emphasize conservatism in pelvic infection and avoid as long as possible any operative methods.

I want to think Dr. Page for this very excellent paper. It is worth reading many times and we can use it, for the present at least, as a guide in the treatment of pelvic infection.

Dr. Lawrence D. Smith, Des Moines: First of all,

we should know whether we are discussing lower or upper pelvic infections. The doctor did not designate specifically with which one he was dealing. However, all lower pelvic infections are limited above by the internal cervical ring, and all upper pelvic infections are above the cervical ring. Dr. Page's very fine paper said little about the diagnosis, which is probably the most important thing with which we have to deal; then comes the treatment.

The diagnosis of pelvic infections falls naturally into three great groups: first, the gonococcic group; second, the pyogenic group, the streptococcus, staphylococcus, and bacillus coli; and third, the tuberculous or granulomatous group. Until recently, we have not considered the tuberculous group as a part of the picture, but from histologic and pathologic studies, we are finding more and more tuberculosis of the tubes. Of the two organisms with which we have to deal, the gonococcus and the streptococcus are by far the most important, and the doctor has told us that the gonococcus travels by way of the mucous membrane only. That is true. It is a slow traveling organism, so we should look for the hallmarks of infection in gonorrhea. What are they? On examination we find involvement of the openings such as the Bartholinian, Skene's ducts, the urethra and reddened vulva, salmon-colored mucous membrane, with a drop of mucus or pus from the urethra. There usually is a drop of pus from the cervix, but you may throw away the microscope because it will not do you any good. This has to be done clinically. During the examination, you will find the rough fornices that are always present in chronic gonorrheal infections. If these infections move slowly, as in the case of gonorrhea, they will be lumpy.

The particular point I wish to emphasize is the differential diagnosis between gonococcic infections and streptococcic infections. When you make your bimanual examination and feel a large, lumpy mass on either side of the uterus, you can be reasonably sure, with the rest of the findings, that it is a gonorrheal infection with which you are dealing; but with your parametrial structures invaded, your fingers will run onto an even, tender, hard mass, which is usually streptococcal in origin.

As to the treatment, I heartily agree with the essayist that it should be conservative, and that very few patients need surgery. I am not going into the surgical end, except to say when surgery is indicated in pelvic infection, let it be real surgery and not tampering surgery. Operative intervention should be necessary in only three to five per cent of the cases. Indications for surgery are: first, where the uterus lies in the pouch of Douglas, adherent, its vascularity disturbed, and the appendages anchored; second, uncontrollable bleeding from fibrosis; and third, uncontrollable chronic infection with recurrences. Many women are operated upon, and then return in three or six months with lumps on either side and more trouble. If you are treating pelvic infections surgically, take out everything that needs

to be eradicated and do not do so-called conservative surgery. More women at the present time have abdominal pains and backaches as the result of tampering pelvic surgery than any other form of surgery we have.

**Dr. E. D. Plass, Iowa City:** We have had a relatively large experience with pelvic inflammatory disease and have come to conclusions which are practically identical with Dr. Page's.

It might be well to emphasize very briefly the outstanding points of his remarks. First, pelvic inflammatory disease is essentially, in its early stages, a medical condition to be treated conservatively. Second, operation is indicated only after failure of conservative treatment, for incapacitating pain, because pelvic inflammatory disease practically never causes death in itself. Third, the best indication that the infection has subsided to the point where an operation can be performed safely is obtained after bimanual examination. If there is no temperature reaction, an operation can be considered; but if the temperature rises, the risk of operation is much greater.

I would also emphasize that one should make a differential diagnosis, if possible, on the basis of history and findings, between gonococcal and streptococcal infections. Gonococcal infections can be attacked safely within a few months. Streptococcal infections can never be attacked safely. One of our patients had a very stormy convalescence following an operation which was performed twenty years after the abortion which introduced the streptococci.

I am thoroughly persuaded, also, that the point which Dr. Smith made is sound, namely, that surgery for pelvic inflammatory disease should rarely, if ever, be conservative. We have adopted the general principle that the proper treatment of pelvic inflammatory disease demands either no operation or a radical removal of all infected structures, except in those rare instances where there is localized pus which can be attacked and drained extraperitoneally.

**Dr. Page, closing:** The chairman of the surgical section had in mind a paper on the radical treatment of pelvic infection. I think he wisely dropped that side of it. It seems to me there is but one course, and that is the one which has been described as conservative. I do not think it would be possible for one honestly to give a paper solely on the radical treatment in pelvic infections. I want to thank the gentlemen for their discussion of the paper.

## A REVIEW OF URETERAL SURGERY\*

H. W. SCOTT, M.D., Fort Dodge

Ureteral surgery is likely to be complicated because of, first, the difficulty of reaching the ureter; second, the danger of infection secondary to urinary leakage; third, the possibility of stricture

as a sequel to ureteral incision; and, fourth, the danger of still later damage to the kidney that may necessitate nephrectomy.

In the latter part of the last century, a presumptive diagnosis of ureteral calculus warranted rather frequent exposure of the ureter for both diagnosis and the removal of stones. With the advent of the x-ray, the correlation of symptoms with the x-ray evidence of calculi gave more definite reason for exposing a segment of the ureter for the removal of a stone rather than making it simply an exploratory operation. The later use of the cystoscope, especially in the last twenty years, and its appliances for ureteral calculus localization, led to quite accurate diagnosis both as to the location and as to the size of the stone. It was a matter then of exposing the ureter and removing the stone. These same cystoscopic appliances have produced means for extracting these ureteral stones, when not too large, or of dilating the ureter to facilitate the passage of the calculi. Therefore, surgery of the ureter for stone is not performed nearly as often as it was before the days of the cystoscope.

The ureter may be approached transperitoneally or extraperitoneally. The easiest method is through the abdomen, but, because of the possibility of peritonitis due to urine leakage and infection, it is best to use the extraperitoneal method. In any case, the ureteral incision should be in the long axis of the ureter and a drainage tube should be left leading down to the ureteral opening. Whether or not the ureteral cleft should be sutured makes little difference. If the ureter is reasonably normal and there is no additional obstruction farther down, the ureter should heal in a relatively short time.

There are several recognized surgical procedures on the ureter. These may be summarized as:

1. Transplantation of the ureters to the bowel.
2. Transplantation of a ureter to a different bladder location.
3. Ureteral anastomosis.
4. Ureterostomy.
5. Ureterotomy.
6. Ureteral meatotomy.
7. Operations for ureteral fistulae.

It seems that the logical indications for ureteral transplantation to the bowel are:

1. Exstrophy of the bladder.
2. Carcinoma of the bladder involving one or both ureteral orifices or involving the bladder so extensively as to make ureteral transplantation a valuable palliative procedure.
3. One might consider the "cord bladder" as indication for bilateral ureteral transplantation to

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the bowel; yet, in the usual run of these cases, the patient is so debilitated because of the primary condition, such as a pernicious anemia, broken back, cord tumor, tabes dorsalis, etc., as to make it a much less formidable procedure simply to institute permanent cystostomy.

4. In advanced inoperable bilateral renal tuberculosis with its secondary tuberculous cystitis, one might contemplate the idea of ureteral transplantation for relief from the terrific urinary frequency; yet, the ureter in these cases is always tuberculous and these patients are always debilitated so that, if such a procedure is considered it is better simply to bring the ureters out through the back and not attempt such a radical procedure as ureterocolostomy.

The successful outcome of an operation calling for transplantation of the ureter to the bowel is by no means certain. There is a high mortality rate in these cases. The mechanical difficulties are not so great. The chief cause of failure in the technic and of the death of the patient is ascending infection of the ureters and then of the kidneys from the intestinal tract.

Transplantation of a ureter to a different bladder location is indicated chiefly in carcinoma of the bladder involving a ureteral orifice to such an extent that if surgical resection of the bladder is undertaken, the ureter must be severed. The same situation may be present in removing a vesical diverticulum. In some ureteral injuries it may be advisable to attempt ureterocystostomy.

Ureteral anastomosis is indicated in injuries severing the ureter, whether these injuries are caused by accidental trauma or produced in the course of other surgery. The chief dangers are lack of union due to the urine and infection, and stricture due to scar formation if union does take place. Here, there is a choice of two procedures, anastomosis or nephrectomy. Before doing a nephrectomy for any purpose, it is absolutely necessary to prove the presence of the opposite kidney and the second kidney should be a good one. In ureteral anastomosis, it is well to remember that the ureter may be lengthened as much as an inch by steady gentle traction.

Ureterostomy is indicated in injuries, accidental, surgical or cystoscopic, where the ureter has been lacerated and where there is extravasation of urine. Every one knows the serious consequences of urinary extravasation. It may be advisable to bring the ureters out through bilateral flank incisions in hopeless cases of bilateral renal tuberculosis and in hopeless cases of vesical carcinoma.

Ureterotomy is indicated for the removal of ureteral calculi.

Ureteral meatotomy is usually performed to

liberate a calculus impacted in the ureteral orifice. It may be accomplished by incision with cystoscopic scissors or by fulguration. The latter method has the advantage because it is bloodless.

Ureteral fistulae from whatever cause offer another operation of considerable magnitude. The majority of these are ureterovaginal in type. The surgical indications are, first, to allow time for spontaneous closure. With failure, the second thought is to repair the ureteral defect over a catheter left in position both as a guide and for drainage. The third indication is to perform ureterocystostomy, ureterocolostomy or to bring the stump end of the ureter out through the skin. As a last resort, and providing the second kidney is good, it may be necessary to do a nephrectomy.

In conclusion, I urge that ureteral surgery be approached with great respect. Failures are prone to be frequent. Unfortunately failure often means the death of the patient. Therefore, nothing but absolute indications should warrant ureteral surgery.

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### THE PROPER METHOD OF TREATING UTERINE CANCER\*

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It is my purpose to discuss this subject briefly by citing specific cases from our records at the University Hospitals, which illustrate definite errors in the management of uterine malignancies, and by deducing therefrom the general principles involved in correct treatment.

Case 1. W. C., white, forty-four years of age, four children, one miscarriage, was admitted to the clinic on February 27, 1934. Since June 1, 1933, there had been occasional "spotting," and from December 1, 1933, a more or less continuous bloody, watery discharge had been noted. During January, 1934, bright bleeding occurred several times daily and early in February she consulted a physician, who, according to the history, did a biopsy, and told the patient she had cancer. A few days later, a subtotal hysterectomy and bilateral salpingo-oophorectomy were performed and when she was dismissed she was sent to the University Hospital for radiation therapy. Our biopsy revealed an epidermoid carcinoma; Schmitz III; treatment was instituted. It is obvious that the

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operation was completely useless therapeutically, since it did not make any pretense at removing the real lesion. Not only did it represent meddlesome and useless operative intervention, but very probably the trauma tended to make the malignant tumor grow more rapidly.

Case 2. A. J., colored, forty-seven years of age, one child, one miscarriage, was admitted March 1, 1932. During 1929, the body of the uterus was removed for fibromyomata and the right tube and ovary were extirpated, following which the menses ceased. Vaginal bleeding began in October, 1931, and became progressively worse until February 22, 1932, when her physician sent her to a local hospital where she remained until the bleeding lessened and then came to the University Hospitals. On admission a Schmitz Group III epidermoid carcinoma was found and radiation treatment instituted. This case illustrates the chief argument favoring total hysterectomy for the treatment of benign lesions of the uterus. Considering the interval between the subtotal hysterectomy and the appearance of the cervical malignancy, it seems probable that the latter was not present when the uterine body was removed and that, therefore, removal of the cervix would have certainly prevented this cancer. It would seem that the usual tendency to perform subtotal hysterectomy, except when there is some special reason for simultaneous removal of the cervix, should be reversed, and that total hysterectomy should become the procedure of choice to be avoided only in the presence of definite contraindications. The argument that complete removal of the uterus is attended with a much greater risk than its subtotal extirpation is not substantiated by series reported from the larger clinics which show practically identical mortalities. Moreover, the development of malignancy is a definite risk in any retained cervix, as is shown by the fact that among 263 cervical cancers treated at the University Hospitals there were 22, or 8.3 per cent, which appeared after the uterine body had been removed.

Case 3. N. S., white, twenty-one years of age, was admitted April 22, 1932. She was married at the age of eighteen years but had never been pregnant. In 1930, a continuous foul smelling, dark, bloody vaginal discharge appeared, with the menses continuing regularly. The first physician consulted advised vaginal douches which did no good. A second consultant detected a tumor and in January, 1931, extirpated the mass, probably by partial cervical amputation. For three months the discharge was less but then reappeared and soon became as profuse as before. Another physician was consulted and in June, 1931, performed a simple vaginal hysterectomy, and later applied

radium, quantity unknown. This procedure stopped the discharge, but in November, 1931, backache and pain and swelling of the left leg appeared, and the patient was sent to the University Hospital for x-ray treatment. The upper end of the vagina was infiltrated and both parametria were involved. There was a marked febrile reaction and considerable anemia. Milk injections and a blood transfusion were given and three weeks after admission a large parametrial abscess was opened by incision above Poupart's ligament. Biopsy revealed an epidermoid carcinoma. Deep x-radiation was given as a palliative measure. The patient died September 10, 1932. Two errors in treatment are evident. The tumor tissue removed at the first incomplete operation should have been examined microscopically so that the diagnosis could have been made while there was a chance of effecting a cure. In the second place, vaginal hysterectomy, as ordinarily performed, is not a suitable operation for carcinoma of the cervix, except possibly in extremely early cases where the diagnosis can only be made by the microscope and this was evidently not such a case.

Case 4. M. D., colored, forty-seven years of age, five full term pregnancies, was admitted October 31, 1933. From June, 1933, there had been pain in the lower abdomen, and in August she was operated upon for "pus tubes." Evidently, the body of the uterus and the tubes had been removed and drainage instituted. The patient was examined before this operation but was not told whether the cervix was diseased. Examination on admission three months after the first operation showed a Group IV (Schmitz) cervical carcinoma with the left parametrium infiltrated to the pelvic wall. Biopsy revealed an epidermoid carcinoma. Deep x-ray was given and later 4590 mgm. hours of radium were applied to the cervix. It seems quite improbable that carcinoma of the cervix could have progressed from a small lesion not grossly recognizable to where it completely involved one parametrium to the pelvic wall within the three months which had elapsed between the laparotomy and admission to the clinic. Pelvic examination should invariably include exposure of the cervix with a speculum, and visible suspicious lesions should always be subjected to biopsy. It would seem here that the presence of palpable pus tubes, which are relatively harmless, had blinded the attending physician to the far more serious carcinoma.

Case 5. E. E., white, fifty-two years of age, eight full term deliveries, was admitted January 31, 1934. In January, 1931, contact bleeding was first noted and six months later she was examined by a physician who advised her to come to the



University Hospital. Instead of following this advice, she went to another physician, who cauterized the cervix without relief. Finally, in January, 1933, a third physician did a vaginal hysterectomy for what he said was cancer. There was improvement of local symptoms for five months and then increasing pain in the back and right hip. Examination revealed the upper end of the vagina infiltrated and fixed to the pelvic walls by a neoplastic mass. Deep x-ray was given for palliation. The cautery is widely advised for the treatment of cervical erosions and eversion but, as ordinarily employed in these conditions, it obviously has no place in the treatment of malignancies. It should also be clear that every erosion which appears suspicious of malignancy should be subjected to biopsy with histologic examination of the removed tissue before being treated as a benign lesion. In this case, the inadequacy of ordinary vaginal hysterectomy in advanced carcinoma of the cervix is again evident. A probable diagnosis of cancer had been made about eighteen months before the operation was performed, and in all probability the lesion was completely inoperable by any method of attack.

Case 6. M. S., white, thirty-six years of age, three full term deliveries, was admitted June 15, 1928. On April 21, 1927, the uterus and both tubes and ovaries were removed vaginally for what was said to have been a cancerous or a precancerous lesion. In December, 1927, vaginal bleeding began and another physician located a tumor in the upper vagina but advised no treatment. There has been a continuous prune-juice discharge with occasional intervals of bright bleeding. Examination on admission revealed a friable neoplastic nodule in the apex of the vagina and the entire true pelvis filled with a firm tumor mass. Biopsy showed an epidermoid carcinoma. The bleeding mass was cauterized and deep x-ray therapy given. This is another instance of the failure of ordinary vaginal hysterectomy. As a matter of fact, it is doubtful whether hysterectomy has a place in the treatment of cervical cancer unless a very radical operation is performed with removal of a wide cuff of vaginal wall and the greater part of the parametrium on either side. Early extension of the malignant process in either direction cannot be determined even at operation, since beginning invasion is determinable only microscopically. Furthermore, complete hysterectomy increases the difficulty and the risk of the later application of radium by bringing the bladder so much nearer the vaginal apex.

Case 7. E. B., white, forty-two years of age, two full term pregnancies, was admitted December 9, 1929. In May, 1929, the patient had a men-

strual period but did not cease flowing. In June, 1929, she went to a physician, who prescribed some medicine to control the bleeding, without examining her. In August, 1929, the same physician, still without having done a bimanual examination, removed both tubes and ovaries by laparotomy. The bleeding continued as before and finally, he sent her to the University Hospital with a request for diagnosis, indicating that he would offer treatment at home. Examination on admission revealed a Group IV (Schmitz) epidermoid carcinoma, both parametria being involved grossly. Because of a severe anemia, blood transfusion was given, followed by thorough cauterization of the cervix. Before discharge palliative x-radiation was employed. The patient died on May 27, 1930. This case illustrates the danger of attempting to treat patients with vaginal bleeding without a careful pelvic examination. The attending physician wasted seven months while he experimented with useless internal medication and with completely unindicated pelvic surgery, while the correct diagnosis could almost have been made from the history and certainly on vaginal examination. That this failure to examine patients with vaginal bleeding is not uncommon is shown by the fact that seven per cent of the patients admitted with cervical carcinoma during the past six years insisted that the home physician had not done a bimanual examination.

Case 8. N. B., white, forty years of age, six full term pregnancies and one miscarriage, was admitted to the hospital January 15, 1929. During March, 1927, she had a miscarriage and subsequently there appeared a watery leukorrheal discharge which became blood-stained early in June. A physician was consulted and advised operation. Subtotal hysterectomy was performed with temporary cessation of the bleeding, which, however, reappeared in August, 1928. Radium was applied and repeated in November, 1928. Upon admission, the cervix was replaced by a crater, and both parametria were infiltrated. Biopsy revealed adenocarcinoma. Radium was applied (1375 mgm. hours) to the cervix. On subsequent admissions, deep x-ray and radium were used without success; the patient died in August, 1930. Subtotal hysterectomy should not be depended upon in adenocarcinoma of the body, because it is difficult, except microscopically, to determine how much of the mucous membrane has undergone malignant change. In this instance, the operation evidently did not remove all of the malignant tumor which had probably already involved the cervical mucosa. Recurrence was therefore inevitable.

Case 9. S. W., white, sixty-five years of age, never pregnant, was admitted December 29, 1932.

In December, 1931, ten years after the menopause, the patient began to have vaginal bleeding, which increased until March, 1932, when she first consulted a physician, who explained the bleeding on the basis of fibroids which were known to exist. Subtotal hysterectomy was done with removal of a fibroid uterus. She had a small ulcer of the cervix which was treated by local applications after the operation. In October, 1932, bright bleeding reappeared and a cervical biopsy was reported benign. On admission, examination showed a bleeding friable tumor replacing the cervix. Biopsy showed adenocarcinoma. Radium was applied and patient was given x-radiation at home. Death occurred in September, 1933. Fibroids rarely produce bleeding after the menopause, but adenocarcinoma frequently develops in a fibroid uterus, as in this case. Postmenopausal bleeding should always suggest malignancy, since in our material it is present in two cases out of every three. Complete hysterectomy on the suspicion of malignant change probably would have prevented this death from cancer.

Case 10. C. W., sixty years of age, two full term pregnancies, was admitted February 19, 1932. The menopause occurred at forty-six years of age. During the spring of 1931, the patient noted a brownish, watery, vaginal discharge without bright blood. In July, 1931, she consulted a physician who made a clinical diagnosis of carcinoma of the cervix and sent her to a hospital, where a biopsy was performed and radium introduced into the cervical canal. Curettage was not performed. The radium was left in situ for seventy-two hours. There was no evidence of malignancy in the removed tissue. On October 1, 1931, the upper vagina was found to be markedly constricted with the cervix practically invisible. The uterus was enlarged to the size of a small grape fruit, irregularly nodular and hard. There was no bleeding and very little leukorrhea. It was felt that the patient probably had a fibroid uterus without any malignant change. On admission, four and one-half months later, the uterus was much larger than previously and the anterior vaginal wall was infiltrated with a hard, nodular, tumor mass. In all probability, the discharge, which first took this patient to her physician, was due to an adenocarcinoma arising in the fibroid uterus. Had a diagnostic curettage been done when the biopsy was taken, the lesion could have been recognized while the uterus was still freely movable with the hope that complete hysterectomy would have effected a cure. It is ordinarily wise to perform a curettage when biopsy is taken for diagnosis, particularly in women past the menopause, because of the relative frequency of body cancer in older individuals.

#### CONCLUSIONS

The points in the proper management of patients with carcinoma of the uterus, which are emphasized by these brief case reports are:

1. Every patient with abnormal vaginal bleeding must be examined bimanually. There is no sound reason for waiting until the bleeding has ceased.

2. Every suspicious lesion of the cervix must be subjected to biopsy before it can be regarded as benign and treated as such. If the cervix appears benign but does not respond to the usual treatment for cervical erosion, biopsy is demanded.

3. Supravaginal hysterectomy should never be employed for the treatment of supposedly benign uterine lesions unless the cervix appears normal. In any instance, the cervix which is left in situ after such an operation constitutes a source of danger, since carcinoma may develop later.

4. Ordinary vaginal and abdominal total hysterectomy do not constitute adequate treatment for cervical cancer except possibly in very early cases where the diagnosis can only be made microscopically.

5. Operative attack on even early cases of cervical carcinoma is justified only if the operator is prepared to remove the upper one-third of the vagina and both parametria practically to the pelvic wall by the radical hysterectomies of Wertheim or Schauta. Even in expert hands, such operations have a primary mortality of ten to twenty per cent, and there are many who feel that all groups of cervical carcinoma should be treated by radiation therapy.

6. Proper radiation treatment consists in the use of both deep x-ray and radium as soon as a positive diagnosis has been made. These procedures are technically sufficiently difficult so that they should be attempted only by those who have had special training, supplemented by reasonable experience. It is no simple matter to judge correctly the amount of irradiation that should be given; too little does no good and too much leads to serious sequelae.

7. The only hope for reducing the death rate due to cervical cancer lies in early diagnosis and in adequate treatment instituted as soon as the diagnosis is made.

8. Abnormal bleeding from the uterus itself demands diagnostic curettage with microscopic examination of the curettings.

9. Complete hysterectomy should be performed for adenocarcinoma of the uterus; the cervix should not be left in situ. In certain instances, radium and x-radiation may be employed successfully, but this method of treatment has not yet obtained wide acceptance.



## THE SCIATIC SYNDROME\*

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We have under discussion a condition which has been considered a disease entity so long that often we fail to look further into the diagnosis and to consider the pain and deformity of the back only a symptom of a possibly treatable disease should the diagnosis be completed. As Riley<sup>1</sup> states "Generations of medical students have been taught that any patient who comes into a clinic or office stating that he has a pain in the buttock which radiates into the dorsal aspect of the thigh and downward into the leg has sciatica." This attitude must change and the search for the causative factor, in each individual case, must be vigorously carried on.

No specific form of therapy has yet been discovered and never will be for we are dealing not with a disease entity but with a symptom complex which needs diagnosis. Search for a cure or treating without diagnosis is analogous to suggesting a cure for neurasthenia, eczema, or headache. From the reports in the literature, it seems evident that there are few cases of sciatic pain that are due to primary involvement of the sciatic nerve as such, and that the condition of the majority of patients suffering from sciatic pain can eventually be classified as secondary sciatica. Such are the conclusions of Danforth and Wilson,<sup>2</sup> Putti,<sup>3</sup> and Grossman and Keschner.<sup>4</sup>

From a diagnostic and therapeutic standpoint it is important to determine the cause of sciatic pain. First, we think of the different systemic disorders that are causative in this condition, such as diabetes, syphilis, gout and the forms of toxic neuritis following absorption of alcohol or the heavy metals. Tumors of the cord are usually distinguished by bilateral pain but they have been known to cause one-sided pain for years before developing additional symptoms on which the diagnosis could be made. Whenever the pain of sciatica is bilateral or if it is unilateral, it is so severe as to necessitate the use of morphine for relief, cord tumor should be suspected. Additional evidence in areas of anesthesia, hyperesthesia, and bladder and bowel disturbance helps to make the diagnosis. Lipiodol injections corroborate the diagnosis and help to establish the level of cord tumor.

Metastatic tumors of the spine or tumors in the pelvis are causes of sciatic pain when they press on the lumbosacral cord. When these tumors arise from the uterus and adnexa or the prostate gland they may cause unilateral pain simulating the true sciatica, and a rectal or pelvic examination is necessary to rule out this cause of a secondary

sciatic syndrome. I have seen cases of this kind in which the diagnosis was made easily by the pelvic examination, and one such patient who died recently complained bitterly of the pain and paresis of the left limb but none of the right limb. In this case the left limb was cold to touch and became badly swollen prior to death. Radiographs showed that the metastatic growth had involved the lumbosacral joint and the left sacro-iliac joint. Another patient suffered for a month with pain of the left sciatic nerve distribution. She denied previous illnesses and then remarked as the physician was leaving the bedside after requesting radiographs, "I have been perfectly well since my operation by Dr. — last spring." The operation it was learned was a left breast amputation. The radiographs showed the metastatic growth in the left sacro-iliac region. The term *neurodocitis* was suggested by Sicard for the inflammatory reaction in the intervertebral bony canal. To this cause of sciatic pain Danforth and Wilson<sup>2</sup> have ascribed a leading cause of what has been considered idiopathic sciatica. Their investigations into the anatomy of the lumbosacral region led them to consider the fifth lumbar as the nerve trunk most often involved. It is the larger of the trunks making up the lumbosacral plexus and emerges through the smaller of the intervertebral canals. In addition Danforth and Wilson emphasized the fact that anatomically the root of the fourth lumbar nerve is susceptible to disturbance at the lower margin of the sacro-iliac joint, in the greater sciatic notch. The root of the fifth lumbar nerve, in addition to being affected in the intervertebral canal, is exposed to disturbances at the lateral margin of the lumbosacral joint. MacKinnon<sup>5</sup> corroborated the anatomic studies of Danforth and Wilson and makes the statement, "All of the features of idiopathic or primary sciatica can be accounted for by infectious lumbosacral arthritis." Changes may take place in the articular facets of the vertebra and in this way be the cause of the pain. Anomalies in the formation of the transverse processes, laminae and even in the bodies of vertebrae are found in radiographs and are provocative of trouble. A fatal case of sciatica was due to a pus formation which extended into the meninges and the patient died a few days later of meningitis. A later study of the radiographs showed the beginning shadows of the abscess. Permission for postmortem studies was refused and the exact nature of the condition was undetermined.

Severe pain in the hips which may even radiate and simulate sciatica and Goldthwait's theory of sacro-iliac strain due to mechanical instability of the foot is well known. Dr. George Preiser, of

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Hamburg, suggested that chronic back strain was gradually followed by an actual arthritis of mechanical origin. For this condition he originated the term of sciatic arthritis.

The pain is felt in the area supplied by the sciatic nerves, and thus extends along the back of the thigh and leg to the foot, but in many cases it spreads to the iliac region, the groins and the front of the thigh. This spread of the pain beyond the sciatic region is said to be due to "spreading," more frequently it is due to actual involvement of the sacral plexus and the lumbosacral cord. Except in the case of sciatica from intrapelvic pressure, or involvement of the spinal cord, the pain is unilateral. It is about equally common on the two sides of the body.

The pain is usually described as gnawing or burning; it is generally felt more intensely back of the thigh and is often worse at night. It is increased on movement and stretching of the nerve. The parts usually indicated by the patient as the most painful are the sciatic notch, the middle of the thigh, the popliteal space just below the head of the fibula, immediately behind the internal malleolus, and the dorsum of the foot. Numbness and tingling often occur. The condition occurs chiefly in adult life and more commonly in men, who are exposed to occupations which necessitate heavy manual effort and exposure. Frequently the sufferer gives a history of trauma preceding the pain, which often starts in the lumbar region, and after several weeks makes its appearance in the thigh, leg, or ankle. The back pain often disappears with or before the onset of the leg pain, and the patient does not associate the latter condition with the back pain. On the other hand, the pain may begin in the leg, and there may be no pain in the back.

The pain may be constant or spasmodic, may be aggravated by movement, coughing, and sneezing, or by assuming certain positions. Its intensity varies from a mild to a severe type, with periods of acute exacerbation. During the period of the acute pain and subsequently, for a varying period, a spinal deformity is present, the trunk being tilted to one or the other side; most often to the side away from the pain.

The duration of the attack varies from a few weeks to several months, or even years. There is a definite tendency to spontaneous recovery. Recurrence of the attack is not uncommon, often after an interval of several years. On examination of the limbs cutaneous disturbances may be present and more than half the cases will show atrophy. The Achilles reflex is diminished or absent in more than fifty per cent of the cases.

The treatment of this condition is suggested by the diagnosis if any of the interesting causative factors are found. Foci of infection are cleared up if possible not forgetting that some have blamed a sluggish bowel for being the focus of infection in this condition and relieved the pain by establishing a more healthy condition in the bowel. Flat feet would be appropriately treated if found. Sacro-iliac arthritis and lumbosacral arthritis are treated by extension, rest in bed, and appropriate braces and casts. Neurodocitis and the fusion operations are best discussed by those who are surgically inclined. Stretching of the nerve under anesthetic has been performed, but I believe is looked upon with disfavor by most surgeons today.

Numerous palliative treatments are valuable if properly selected. The tendency to spontaneous improvement should make us cautious about ascribing too much benefit to our treatment, but it is also a reason for using palliation; for relief is the thing the patient most desires at the time. The large number of treatments still used are evidence of the unsatisfactory state of our present methods for giving the desired relief. Local treatment in the form of dry or moist heat is of prime importance along with the rest. The infra-red lamps, electric heating pads and the hot water bottle are the usual forms of dry heat applied. Mud packs, mustard plasters and linseed poultices are the usual forms of moist heat application. Counter irritation is accomplished by means of the ultra-violet lamp, applying tincture of iodine or turpentine or the painting on of a vesicant such as cantharides. Turpentine liniment is as good as any of the more lauded irritants and is easily available. Of the drugs used for relief of pain, I usually resort to acetyl salicylic acid first, because it is most often effectual in the rheumatic type of pains. This may be changed to codeine or amidopyrine in appropriate dosage or used to reinforce the effect of the acetyl salicylic acid. Osler advises the use of morphine suppositories in severe cases. The use of morphine should always be kept a secret with the patient and relatives. Various substances have been used. Alcohol causes destruction of the nerve which is unnecessary. Novocaine or procaine is satisfactory in one per cent solution, and twenty cubic centimeters is the proper sized injection. The only undesirable result of injection is a slight wasting of the muscles of the leg following the injection, which is more than offset by the relief from pain which is immediate. The result appears to be due to the stretching of the sheath of the nerve and to this same cause is ascribed the beneficial result of epidural injections which will also be described.



Injection of the nerve is a procedure which the general practitioner may use.

The patient should lie on the face with the affected limb exposed and a pillow placed under the lower abdomen to raise the pelvis slightly. The surface marking of the exit of the sciatic nerve, from the pelvis, is slightly external to the mid-point of a line joining the great trochanter and the tuberosity of the ischium. The skin at this point is sterilized and a stiff needle introduced and pointed slightly upward as it proceeds. When the sheath of the sciatic nerve is punctured the patient complains of a sharp pain traveling to the foot. The syringe is then attached and twenty cubic centimeters of fluid are injected slowly. If the needle is properly placed, considerable force is required to empty the syringe, and easy injection should make the operator suspect that the point of the needle is in the subcutaneous tissue rather than the nerve sheath.

Epidural injections through the sacral hiatus have been used especially advantageously in refractory cases. The good results are probably due to the pressure of the large amount of fluid which breaks up adhesions along the course of the nerves.

Where necessary the injections are repeated every four days to a week, and as many as seven to ten have been given for relief. The patient is placed on the table with the hips slightly raised and the buttocks and sacrum prepared aseptically for injection. The sacral cornua is felt about five or six centimeters above the tip of the coccyx on either side. Midway between these the injection is made with a heavy spinal puncture needle entering the sacral hiatus when the point is pushed in with the shaft at an angle of from one hundred and fifty to one hundred and thirty-five degrees with the sacrum. After introducing the needle from four to five centimeters the application of suction will determine if the dura or a blood vessel has been entered. If not, the injection is slowly made of one per cent novocaine or procaine solution in normal salt and the amount varies from thirty to one hundred cubic centimeters. After a small amount of fluid has reached the epidural sac the patient usually complains of pain on the affected side. If there is no pain there is usually no relief. Patients so treated are kept lying for about two hours in most cases. Some physicians require twenty-four hours' bed rest. Dizziness and nausea and even unconsciousness have occurred in some cases during the injection, but this has lasted for only a few minutes and no ill results have followed.

## SUMMARY

1. Sciatica is a symptom, the cause of which should be diligently sought.
2. Appropriate treatment of the infective focus or other underlying causes is the first thought in treatment.
3. Symptomatic treatment, which is the second thought, is an essential if you wish to hold your patient.
4. Rest, heat and drugs are useful. Epidural injections are probably the most efficient method of treatment, and are used for ambulatory treatment in some clinics.

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## DIAGNOSIS OF GASTRIC MALIGNANCY\*

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The diagnosis of cancer of the stomach should be considered under two headings, the early diagnosis and the late diagnosis. By making such a division as this, we separate fairly well the curable from the incurable cases, and, in addition, we build a much better perspective of the disease in the eyes of the student as well as the practitioner of medicine.

The late manifestations of cancer of the stomach constitute a picture that is very familiar to all of us. Little or nothing need be said about it. In the early diagnosis of cancer of the stomach, there are only two outstanding factors. The first is the x-ray picture and the second is the early clinical symptomatology which should indicate to the doctor the necessity of examining his patient's stomach. It should be emphatically pointed out that the most definite evidence we have of cancer of the stomach rests with the features shown by the x-ray. It should further be pointed out that the value of the x-ray depends upon the knowledge and experience of its interpreter. For the x-ray to be most valuable, repeated examinations are often necessary. One can repeat the examination immediately, under the influence of belladonna, or

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repetitions can be made at three to six week intervals, until sufficient time has elapsed that all doubt concerning cancer has been completely eradicated. Repetition of the x-ray is of special value in the earlier cancer cases that may be confused with chronic gastritis, with achylia, with nervous dyspepsia and, in particular, with peptic ulcer.

The early clinical signs of cancer of the stomach should be considered under the following three groups:

1. Cancer may occur in people who have had no previous gastric or digestive trouble.
2. Cancer may occur in patients who have been long sufferers of chronic dyspepsia.
3. Cancer may occur in association with the clinical symptomatology of peptic ulcer.

The first group comprises by far the greatest number of cases seen. At least sixty to seventy per cent of the patients come under this group. Therefore, when a patient is in the cancer age and has had no previous digestive disturbance, the development of any dyspeptic symptoms should be looked upon as suspicious of cancer, and if these symptoms are not readily relieved by the simple forms of treatment, that patient certainly should have a complete stomach examination. In the second group it is even more difficult to suspect cancer. However, any change in the severity of the symptomatology, or any change in the character of the symptoms should indicate to the doctor the necessity of a reconsideration and a re-examination of his patient. In the third group, the transition of ulcer to a malignancy has never been definitely proved. However, there are many physicians who are willing to accept such a possibility. The number of instances with which it occurs varies greatly in different statistics. Stewart of London is regarded as very fair in his statements. He believes that about six to nine per cent of ulcers apparently undergo a malignant change. He further states that about fifteen to seventeen per cent of cancers have their origin in patients who have complained of a symptomatology consistent with peptic ulcer. This high incidence in the relation of cancer to ulcer should mean to the doctor that in treating ulcer of the stomach he should be very careful, and not allow a cancer to be present without its being recognized.

Cancer of the stomach must not only be differentiated from the other intrinsic gastric lesions but it must also be differentiated from a great many extrinsic gastric lesions that produce stomach symptomatology. Time will permit me to show you only a few plates relative to the differentiation between gastric cancer and gastric ulcer.

This patient is a man in his late fifties. (See Fig. 1.) He had complained of stomach disturbance about nine months previous to the taking of this plate. His gastric acidity was low, and there was occult blood in both the stool and gastric contents.



Fig. 1

The x-ray, as you see, shows a marked filling defect in the pyloric antrum. There was a disturbance of the flexibility shown by the fluoroscope over the same area. Here the diagnosis of cancer of the stomach is easy. The only doubt is as to its resectability. Since metastases do not always go hand in hand with the size of the growth, we referred this patient for operation. When the abdomen was opened there were no apparent metastases, and the large, scirrhus cancer was resected from the pyloric portion of the stomach. Like this relatively large cancer, most cancers can be differentiated from ulcer fairly well, but when it comes to the malignant ulcer, the question is entirely different. Malignant ulcers may mimic simple, benign peptic ulcers so closely that only the microscope is able to make the differentiation. There are other instances in which the character of the lesion itself may point in the right direction for the diagnosis.

Figure 2, as you see, shows a large niche on the lesser curvature of the stomach. Large niche ulcers are often malignant, as mentioned by the previous essayist. Niches two and one-half to three centimeters in diameter are not infrequently



malignant. There are, however, many exceptions to this rule, and more important than the size of the niche is the character of the niche margin. Irregular, apparently elevated niche margins are usually malignant. When that type of niche mar-



Fig. 2

gin is associated with large ulcers, they are nearly always malignant. Accordingly, this patient was referred for operation, and a large ulcer with a small cancer in the distal margin was resected.

This patient is forty-eight years of age. (See Fig. 3.) She had complained of stomach symptoms three weeks before this plate was taken. It has been said that recent ulcers in the cancer age are very likely to be malignant. There are, however, in this instance certain features that are characteristic of benign ulcer. In the first place, this is a deep, penetrating type of lesion which is characteristic of ulcer. That stands out in contrast with the broad, superficial niche which is usually associated with cancerous ulcers. Then again, this lesion is on the lesser curvature of the stomach, the position of the stomach in which ulcers most usually occur.

Stewart has said that seventy-three per cent of ulcers of the stomach occur on the lesser curvature and usually near the incisura angularis. This stands out in contrast with about eleven per cent of cancers occurring in the same area. In addition,

this patient exhibited considerable tenderness over the lesion, while malignant ulcers are usually not tender. Her gastric acidity was well within the limits of normal, although too much importance should not be placed upon the character of the gastric acidity; so we have a preponderance of evidence in favor of ulcer, yet this is a patient in the cancer age with a recent ulcer.

There are certain teachers who believe that it is dangerous to treat any ulcer of the stomach medically because of the fear of cancer. We believe this is true, but we believe it is equally true that it is more dangerous to subject all ulcers of the stomach to a routine surgical resection. We believe that the thing to do with this kind of a lesion is to place the patient on the therapeutic differential test, which has been used for a great many years by most gastro-enterologists. It has recently been explained very well by Jordan, and consists of placing the patient on the usual ulcer treatment with bed rest for a period of three to six weeks and then watching the course carefully for four different diagnostic points.



Fig. 3

The first of these is the clinical symptomatology which should disappear, or at least materially improve in ulcer. The second is occult blood in the stool and the gastric contents, which should also

disappear in ulcer. The third is the character of the acid gastric secretion which should not become lower in ulcer. The fourth, and more important than any of the rest, is composed of the x-ray findings which in ulcer should show evidence of heal-

failed to show any evidence of malignancy. We lost this patient, which is a reminder to us that extensive resection in ulcer increases the operative morbidity.

Lesions at the inlet of the stomach are often malignant, as are lesions on the posterior wall. Lesions on the greater curvature are usually malignant, but the real hotbed for malignancy in the stomach is the pyloric portion. Stewart has said that sixty-eight per cent of all cancers of the stomach occur in the first prepyloric inch. Rochester statistics show that one-third of small ulcers in every way indistinguishable from simple benign ulcers are malignant when they occur in the pyloric portion of the stomach; so all lesions in the pyloric portion of the stomach must be looked upon with a double suspicion of malignancy.

In conclusion, there are no definite early symptoms characteristic of cancer itself, so if we would



Fig. 4

ing. A favorable response in these different diagnostic points for ulcer should encourage the doctor to continue his medical treatment, yet always under careful observation and with freedom in the use of the x-ray. That is just what we did with this patient. She was put under the usual treatment, and in three weeks this plate was taken, Figure 4, which shows only a very thin portion of the niche remaining. An unfavorable response in these different diagnostic points should mean immediate exploration.

This patient was a man in his early sixties. (See Fig. 5.) He had complained of stomach distress consistent with peptic ulcer over a number of years. The x-ray shows a large niche with considerable gastric deformity. His gastric acidity was very low. Because of the size of the ulcer, and the association of low gastric acidity we feared the possibility of malignancy. This patient was referred for operation, and the lesion was removed with a sleeve type resection. Microscopic examination



Fig. 5

make a diagnosis early in these cases, we must examine our patients on suggestive symptoms. Often they may be rather flimsy. The x-ray is the most dependable agent we have upon which to base a diagnosis. The therapeutic differentiation, rightly applied, will save many patients needless operation; wrongly applied, it may do some harm.

1002 Equitable Building.



## SURGICAL PROCEDURES FOR NEOPLASMS OF THE RIGHT HALF OF THE COLON\*

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It is not the purpose of this discussion to go into the pathology or diagnosis of masses or tumors of the first part of the colon. However, when confronted with the conditions later to be enumerated, I shall briefly describe what in my experience, and, in some cases the experience of others, seems to give the best results in their management. It is with tumors which occur in the right half of the colon, to which I wish to draw your attention.

While the following may not be a comprehensive list, they are the usual ones which are met in this part of the anatomy. They are: actinomycosis; tuberculosis of the colon of the hyperplastic type; polyposis; tumors of connective tissue origin, namely, fibroma, lipoma, myoma, myxoma, and angioma; cysts usually occurring near the ileocecal valve and protruding into the cecum; and carcinoma.

Actinomycosis involving the bowel, while a rather rare condition, still is met and when seen presents a problem which is not simple. If the condition is localized and has not caused many adhesions, or involved the abdominal wall, the best procedure is a resection of the gut with anastomosis. If there are sinus and cyst formations, a thorough opening of all cysts and sinuses is the best management, wiping the lining with gauze and swabbing with tincture of iodine as you proceed. This may be a long task and it is necessary to open sinuses repeatedly, but if persistent one is successful in the majority of cases. Internal treatment of potassium or sodium iodide is instigated as soon as possible.

Hyperplastic tuberculosis of the cecum when seen before acute obstructive symptoms arise may be attacked without much preliminary treatment; but one must consider the amount of pulmonary involvement, for if this is extensive the patient is a poor surgical risk, and one is forced into conservative treatment. Where there is little pulmonary involvement a resection of the diseased bowel with anastomosis of the proximal and distal portions is the procedure of choice. If one is presented with this condition where the lymphatics are matted with firm adhesions no attempt to resect should be made. An enterocolostomy around the affected part gives the best results. All these patients should receive, just before the operation, abundant fluids in the form of normal salt hyper-

dermoclysis, and if they are emaciated a blood transfusion will be of great benefit. Like all tuberculous persons they need forced feeding of high nitrogenous food with prolonged rest.

Benign tumors which occur in the first part of the colon usually give little trouble until, by their size or by producing an intussusception, they cause an obstruction of the bowel. Tumors in the serosa should be removed without resection. If more of the gut wall is involved a resection with anastomosis is necessary. In the event of an intussusception in which a tumor is the cause, one's course of action depends upon the condition of the telescoped bowel. When the bowel can be milked out and is in a good condition, the tumor should be removed either by resection or simple excision. When the bowel involved in the intussusception is in a bad condition, beginning necrosis, this portion should be laid out on the abdominal wall and a proximal enterostomy performed, thus relieving the stasis. After the general condition of the patient has improved, the part of bowel outside is resected and anastomosis made. If the condition is such that the bowel cannot be delivered, a radical resection with anastomosis must be done.

Papillomata or polyposis presents a more difficult problem and many times leads to unfavorable results, because, often, instead of a more or less local papillomatous growth within a small area of the colon, it occurs diffused over the greater part of the colon and even into the ileum. Simple removal does not give the results expected. When it can be determined roentgenologically that this condition is more or less localized a resection should be done. At times an acute obstruction occurs which necessitates enterostomy. If the patient's condition warrants it a resection should be done at once; otherwise just the enterostomy, until the general condition of the patient is restored, then a resection should follow. While an anastomosis around a papilloma will result in a subsidence of the growth, it is best to remove them for there is a tendency for these growths to become malignant. The fact that these growths bleed easily and many times rather freely, thereby depleting the patient to such an extent that he is a poor risk, demands blood transfusion preoperatively almost routinely. The diffuse type is a rare condition and occasionally involves the whole colon. The diseased portion of the gut should be removed as far as possible; however, with an extensive involvement, where even a massive resection would not eliminate the condition, conservative measures would seem advisable, possibly cecostomy or appendicostomy. In all of these cases I cannot stress too strongly the use of all

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restorative means at our command to build up the general condition; namely, blood transfusions, free use of fluids, rich non-residue diet, and proper elimination.

I come now to carcinoma, by far the greatest problem. A great deal can be done for these patients with surgery, not only in effecting a cure in an encouraging number of cases, but also in relieving the distressing symptoms which arise when they are allowed to progress to the point where radical operations are contraindicated. Pemberton and Dixon in going over the cases at the Mayo Clinic found that of 3,542 cases of carcinoma of the colon, 211 were of the cecum and 602 involved up to the splenic flexure. Of these there were 51.81 per cent five year cures in the cecum cases, and 48.97 per cent five year cures in the transverse cases following resection. As in malignancy of any type and location, early diagnosis and prompt action is imperative if one hopes for good results.

It is not the function of this paper to go into the diagnosis, but given a patient who is of cancer age with intermittent constipation and diarrhea; with the story that he does not feel as strong as he usually does; with an obscure dull pain in his right middle and lower zones, and if he is obviously anemic, we should be very diligent in using all the means at our command to determine the presence of carcinoma of the bowel, and when in doubt an exploratory laparotomy is advisable.

Except in the acute obstructive types an adequate preliminary treatment before surgical intervention is necessary. The patient should be in the hospital not less than five days with special attention paid to elimination by means of mineral oil twice a day and daily soapsuds enemas. Forced fluids, plenty of fruit juices, and a high caloric non-residue diet should be given. With a low red blood cell count and low hemoglobin, blood transfusion is indicated.

These cases are divided into the non-obstructive and obstructive. In the non-obstructive, after the preliminary treatment a resection including the cecum, ascending and the proximal one-half of the transverse colon and eight to ten inches of the ileum, with an anastomosis, should be done in a one-stage operation. My choice in anastomoses is an end to side procedure and in all ileocolostomies, one should do an ileostomy about eight inches proximal to the anastomosis, according to the technic of Witzel, so that any pressure that might be exerted on the anastomosis can be controlled, thereby lessening the danger of leakage. When the posterior parietal wall is opened all the lymphatic glands palpable should be removed; when up in the ascending colon field one

should be cautious about injuring the duodenum and ureter.

The obstructive type is a two or three stage procedure. An ileostomy is performed on the left side to relieve the obstruction and drain the toxic contents of the bowel. When the patient is in a suitable condition, usually seven to fifteen days, the second stage is done; a resection with anastomosis, as in the non-obstructive type. Frequently the ileostomy fistula will close without further attack, if not when adequate elimination through the anastomosis is established the fistula is closed.

The so-called inoperable carcinomata tax the operator's surgical judgment to the extreme. Since they are untouched hopeless cases, it seems to me that a step well into a radical procedure is entirely permissible. If your patient does succumb as the result of a radical procedure you have merely hastened the end of a period of trial and tribulations; but in the event of survival when your patient knows that the growth, the original tumor, has been removed and he does not have the discomfort of an artificial opening, he has more hope and peace of mind which is a great deal. Also, it is within reason to hope that, with the growth removed, there will be a slowing down of the advance of the metastatic areas. Furthermore, the patient will be relieved of the bleeding from the original growth and of the secondary infection as well as the toxemia, which causes most of the discomfort and rapid exhaustion, thus affording him a longer period of comfort and apparent good health otherwise not attained. Therefore, even if metastases spread from the mass if it is at all technically possible one should remove the growth rather than perform an anastomosis or enterostomy. However, when confronted with the mass which cannot be removed an ileocolostomy around the tumor must be performed.

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## THE MANAGEMENT OF CASES OF APPARENT STERILITY\*

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Like so many other subjects in the practice of medicine, the question of sterility, or the ability to conceive or reproduce, is one that has been discussed and speculated about for a long time, but it has never been well understood. It has come out of the more or less dark ages of medicine when a witch doctor's charm was thought the most essential thing to give birth to a man child. Scientific study and experiment have eliminated much

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of the speculation and uncertainty, but by no means all of it.

In discussing the subject of sterility, I feel above all things we should stick to the simple facts and avoid conflicting theories and methods as much as possible. The simplest classification that I have found is that of primary and secondary sterility. By primary sterility we mean those cases where no pregnancy has ever taken place to a given couple. By secondary sterility we mean those cases where one or more pregnancies have taken place, followed either by abortion, miscarriages, or full term labor, after which there has been a period of sterility. We must think of sterility as complete or relative; complete, if under existing conditions conception to a given couple is impossible; relative, if pregnancy is only very unlikely. The former or complete sterility can in many cases be definitely determined, while the latter or relative sterility can only be estimated to some extent.

Sterility must not be considered the disease of an individual but a condition of mating, and both the male and female are suspects in any given case. In about one-third of the cases the male is at fault, while in two-thirds of the cases the chief fault is with the female. However, in the majority of sterile couples some fault lies with both parties. Therefore, in order to handle intelligently any case presenting itself for the treatment of sterility we must study both the male and female and we must have their full cooperation. Like any other medical problem, it should begin with a careful history of both parties. It is not necessary for me to elaborate on this, but it is enough to say that the history alone may lead directly to the factor or factors causing the condition.

In the male, the history of gonorrhea with perhaps single or double epididymitis, or mumps with orchitis, or some congenital lesions as an epispadias or an undescended testicle, is significant. In the female, the history of a septic abortion or some pelvic lesion would be suggestive, or there may be delayed or irregular menses, that would suggest an endocrine disorder. The history should include not only past illnesses, but diet and habits, especially those in the sexual life. I will not be able to discuss all these points, but a careful history in either case will probably point to these things, requiring a more detailed examination and study.

In the male, it is much easier to be definite. I feel that we should eliminate him first, or at least establish the factors in his case. In most instances, this is fairly simple. If our history and physical examination have been carefully done and we find him, let us say, entirely normal, we should

still make a careful examination of the semen for the living spermatazoa, their number, form, general activity, and directed motion. This can most easily be done by an examination of a condom specimen. The details of this procedure are well known. An even better method now employed is the so-called Hühner test. This consists in taking a specimen of the secretions from the vaginal pool, the cervix, and even the fundus within one hour after coitus. If numerous active sperms are found, especially in the cervix, instead of dead inactive ones, and our male is otherwise entirely normal, then we can feel assured that the trouble is located higher in the genital tract of the female, and I think we have fairly well eliminated the possibility of a male fault. If only inactive or dead sperms are found, or none at all, even though they appear normal in the condom specimen, we must still think of some antagonistic reaction between the sperm cells and the vaginal secretions. Perhaps too great a vaginal acidity is present, although Meker and others have recently doubted the importance of this.

In making our study of the female faults of sterility, we can divide our cases into two main groups; first, the mechanical or obstructive cases; and second, the general constitutional group. In the latter I will include the endocrine disturbances where we have ovarian deficiencies, hypofunction of the anterior pituitary gland, hypothyroidism, and probably some thymus and adrenal conditions. Some light has recently been thrown on these by the discovery of the follicular hormone by Frank and Allen; the isolation of theelin by Doisey; and the discovery of the sex stimulating hormone of the anterior pituitary gland, both A and B radicles. Aschheim and Zondek and others have contributed a great deal. We now have the Frank test for ovarian deficiency which is based on the premenstrual increase of the female sex hormone. Some startling results have been obtained in a limited number of cases both in restoring function and the cure of sterility by endocrine products; however, I think it is a little early to try to unravel that riddle. We must admit that up to the present time the treatment of sterility by endocrine products has in most hands been disappointing. We are looking forward to something in this line being a real help in the future.

Some authors suggest and report the use of mild stimulating doses of x-ray, either to the anterior pituitary gland or to the ovaries themselves to regulate the cases of irregular menses with sterility. Some encouraging reports have been obtained. Others criticize this method very harshly on the assumption that even stimulating doses of x-ray would be harmful to the susceptible genera-

tive tissue of the ovaries. Future experiment and study must decide this question.

We know that many constitutional diseases and general debilitating conditions are important factors in producing sterility or at least in lowering the general fertility, perhaps below the threshold of conception. Your patient may have anemia, hidden tuberculosis, or undiscovered diabetes. Focal infections are important not only in producing sterility but in causing early abortion. In fact both parties should in every case be brought up to good general health. Diet has recently come into its own as a factor in sterility. In animal experiments with rats and mice, low protein diets have lowered fertility to a marked extent. More important still are the vitamin deficiencies, Vitamin A, B and the recently discovered Vitamin E, are abundant in germ oil. These have been given more consideration and study by our animal breeders than by our workers with human fertility.

I will give only a passing word to such nervous conditions as vaginisms, painful intercourse, and wrong methods of intercourse. In addition we have certain congenital conditions, such as an infantile uterus, and an infantile type of sclerotic ovaries. These have both a mechanical as well as an endocrine phase. Ovulation in these ovaries can sometimes be encouraged by manipulation.

Finally we can consider the mechanical or obstructive group of cases. These comprise the largest single group and those which respond most readily to treatment. Anyone who realizes the more or less complex mechanism of fertilization and conception can easily visualize the many points at which this fertilization and conception can be hindered or obstructed. There may be an absence, deformity or constriction of the vagina itself, or possibly a non-perforated hymen. All are obvious after a careful examination and their treatment should suggest itself.

The cervix which was once thought to be almost the universal cause of sterility, when dilatations and scrapings were the rule, has now been more or less placed in its proper sphere. The long thin cervix of the infantile uterus with the sharp anteriorly flexed angle at the internal os is no doubt often an obstructive hindrance to the ascent of sperm cells. Lacerations, erosions, infections and stenoses all play a part. These must be cleared by whatever method seems to fit the case.

The body of the uterus may be at fault, especially the endometrium. This is particularly true of the premenstrual endometrium which is really the bed for the fertilized ovum. It may be deficient or abnormal as a result of uterine infections or from bad drainage, or it may be deficient as a

result of endocrine disturbance, as ovarian or pituitary failure. Uterine retrodisplacements, fibroid and polyps all play an important part; but no doubt the most common cause of sterility in the female is the occlusion either completely or in part of the fallopian tubes. Here the gonococcus, plays the greatest rôle, although other infections, as the streptococcus, staphylococcus, and colon bacillus are important, especially in postpartum and postabortal cases. Occasionally we find a tuberculous tubal obstruction. It is in this type of case that the recent work on intertubal insufflation brought out by Dr. Rubin has made our greatest advance. Not only is this of great value as a test of tubal patency but it has become a method of treatment in itself. Numerous cases are reported where single or multiple insufflations have been followed by early pregnancy.

The test in itself is very simple. An intrauterine cannula with a rubber or metal stopper to fit the cervix to prevent leakage, a mercury manometer, and an infiltration bulb are all that are needed. Two hundred to two hundred and fifty millimeters of mercury is the limit of pressure to be used, while ten to twenty cubic centimeters of air or carbon dioxide are sufficient to make the test. The patency of the tubes can be determined by watching the fall of the mercury manometer or by listening to the air escaping from the tubes by a stethoscope on the abdomen, or by taking abdominal pictures showing the escaped air. We can go a step farther. By means of lipiodol injections into the uterus and tubes we can often obtain further knowledge of the type of obstruction and its location, whether at the fimbriated end or the cornu or whether peritubal in type. It may help us to estimate the possible benefit of surgical interference, such as salpingotomy.

Finally we must remember that today we do not think or speak as much in terms of absolute sterility, but rather of relative sterility or relative fertility. There is generally not one but a number of factors to blame. In the cases reported in the larger clinics, the average has been about four and one-half factors to each couple. One-third of these are male and about two-thirds female. It is the sum total of these factors or faults whether mechanical or constitutional that have lowered the fertility in any given couple below the threshold of conception and consequently no pregnancy has taken place. Therefore, the question is not only one for the specialist but for any practitioner who engages in the practice of obstetrics and who has these cases to report. He can in many cases eliminate sufficient of these factors to bring fertility above the threshold of concep-



tion and so pregnancy can take place. It is only in the exceptional case where he may need the help of the gynecologist, the surgeon or the urologist.

### FRACTURE OF CARPAL SCAPHOID WITH REPORT OF CASE

J. A. WILLIAM JOHNSON, M.D., Newton

The main reason for reporting the following case of carpal scaphoid fracture is that such cases are generally treated as sprains due to an incomplete history and a superficial examination. Often the x-ray fails to disclose this fracture partly because of inadequate technic and partly because the physician has grown accustomed to look for a Colles' fracture at the expense of the carpus. However, since the use of x-ray has become almost a daily routine, we find fewer sprains, and more carpal fractures. The x-ray has helped us to discover so many different lesions of the lower forearm that we hardly know what to classify under the old term of Colles' fracture.

In 1915 Murphy placed the incidence of carpal scaphoid fracture at two per cent of all fractures. He also found one fracture of the scaphoid to every ten or fewer of Colles' fracture. A recent review of the medical literature on the subject of carpal scaphoid fracture, immediately makes one recognize that the works of Codman and Chase, Kellogg Speed, Etienne Destot and many others still stand out monumental and that the report of a single case is not likely to flaunt anything new on the profession.

The youngest patient on record is a boy ten years of age reported by the Medical Society of London. The second youngest is a boy eleven years of age reported by Dr. Towne. This case was first diagnosed as a sprain, but after x-rays taken, eleven days later, was diagnosed a scaphoid fracture. Coues reports a case of left carpal scaphoid fracture in a boy twelve years of age, who fell while running on the street striking with his wrist flexed against his body on a cobblestone. My patient is a girl fifteen years of age, among the youngest of her sex, if not the youngest, to be reported. She is also one of the very few women reported with this kind of injury, since the fracture is considered one peculiar to the male only, because of the accidents to which his social status subjects him.

Fractures of the carpal scaphoid in childhood are very rare. Early men like Stimson, Scudder, Cotton, Pringle, Keene, DeForest, Willard, Martin, Kermisson, Spencer, and Gast, and other surgical authorities did not discuss them in their writings to any great extent or not at all.

The child's wrist is more flexible and lends itself

more readily to strained and unusual positions. Gastruccio says, "It (scaphoid fracture) is unusual up to the fifteenth year on account of the ball-like form of the scaphoid, up to this age, which offers no catching surfaces, and because between bone and bone there is an interval which is filled with cartilage, through which the impinging forces acting on the bones are weakened. Indeed as far as I know I do not recall a single case of the many cases of scaphoid fracture in the literature which was observed before the eighteenth year."

*Method of Production.* The break usually is the result of direct violence, such as falling upon the hand and backfiring of a motor while cranking. The force, when falling on the outstretched hand, is generally transmitted from the carpus through the scaphoid and semilunar to the radius. MacLennan said, "Especially exposed to violence when during a fall the individual comes down upon the hyperflexed wrist. In this position the lower and posterior aspect of the scaphoid constitutes the most prominent part of the wrist and it receives the full force of the blow." Direct violence applied to the flexed dorsum of the hand is a comparatively rare cause of scaphoid fracture according to this statement by Coues. Destot gives the following theory based on the shape and function of the bone: "In fractures from a fall on the palm of the hand, the scaphoid is the most direct connection transmitting the weight of the body to the ground. By reason of its two bent axes, when the thenar eminence is leant upon, a ball-like movement is produced, which results in bringing the upper extremity of the bone posteriorly. One of three things happens: either the scaphoid firmly ensheathed and forming a mass which the carpal condyle resists, and the radius breaks; or, on the contrary, the position of the scaphoid is such that the force is concentrated on it, and then, in order to escape by tilting, it breaks its upper extremity, on which no ligament is inserted, against the radius; or again, as it is curved on the flat, this curve becomes exaggerated, and it breaks from increase of flexion. The distal fragment then continues the movement and tilts posteriorly into the anatomic snuff-box. Experience shows fracture occurs easily when the hand is hyperextended and bent to the radial side, conditions which fix the bone and prevent it from escaping injury. Fracture from falls on the back of the hand is exceptional; it is also explained by the applications of physiology. The scaphoid is wedged under the radius and cannot escape; it is broken by exaggeration of its curve."

*Classification.* Murphy's following classification into three types is still accepted:

1. Simple transverse fracture due to force applied in the direction of the long axis of the radius. It usually occurs in falls on the outstretched hand—hand in abduction.

2. Transverse fracture with impaction of fragments. Usually this results from a backfiring motor while being cranked, the wrist being in nor-

inently when the thumb is extended. There are two points of marked tenderness, one over the dorsum of the scaphoid just below the line of wrist joint; the other in the tabatière anatomique just below the styloid process of the radius.

Vaughn's knuckle test may be used and is of value in the diagnosis of carpal scaphoid fracture. The patient is told to clinch the fist or at least flex the carpal joint to a right angle. He is then requested to close his eyes while the examiner taps the knuckles smartly, one after the other. If a scaphoid fracture is present, sharp pain will be produced when the head of the second metacarpal is struck. No pain is produced by striking any of the others. Flexion and extension of the wrist are both limited. Extension causes pain referred to the dorsal side of the scaphoid; pain on flexion is not referred to a definite point. X-rays taken with the hand in ulnar deviation will reveal all fractures of the scaphoid. Stereoscopic radiograms are useful in the examination of the injured carpus. It is often difficult to reveal a fracture of the carpal scaphoid by x-ray because of the shape of the bone and the different planes which the fracture may take. Codman and Chase describe their technic as follows: both hands should be placed side by side, palms down, with as much ulnar deflection as possible, with the tube in midline reaching over to the knuckles. They advise that radiograms be taken in different positions and at different angles to determine the

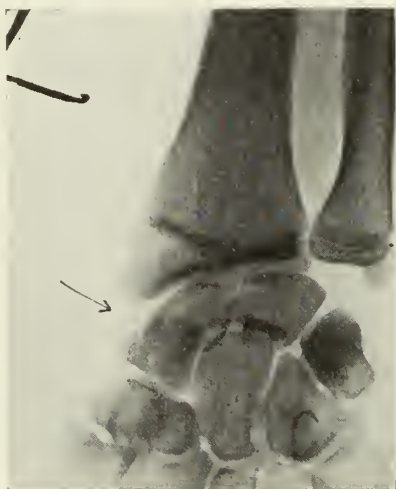


Fig. 1. Fractured carpal scaphoid, May 10, 1934.

mal extension and in ulnar deflection when it happens.

3. Fracture of tuberosity; also from backfiring with the wrist in forcible extension and ulnar deflection. The external radiocarpal ligament undergoes sudden tension and tears off the tuberosity. This is the only extracapsular fracture of the carpus.

*Symptoms.* The inability to perform work requiring extension and rotation is the outstanding symptom. Symptoms such as rapid swelling limited to the anatomic snuff-box or tabatière anatomique are found also in sprains and even in fracture of the styloid process of the radius. Pain on the radial side caused by movement is unreliable. Reduced height of wrist is found in scaphoid fracture, but it is also found in scapholunate dislocation. Crepitus and mobility of fragments are very seldom demonstrable. Only crepitus, felt in the tabatière anatomique when the depression is filled by a hard swelling, has a positive value. It was because of these facts that the older clinicians, without the aid of radiography, missed this lesion.

*Diagnosis.* There is no gross deformity to be seen. There is a definite swelling limited to and seen on the dorsoradial aspect of the carpus extending into the tabatière anatomique so that the tendons bounding it no longer stand out prom-



Fig. 2. Fractured carpal scaphoid, four months later.

direction of the fracture plane. Tyler advocates the use of stereoscopic views of wrist injuries. Todd advises stereoscopic views where fracture of the scaphoid is part of a complicated injury to the carpus.

*Treatment.* It is generally agreed that cases seen



during the first week should be treated by immobilization. Speed advises slight volar and radial flexion or a position midway between flexion and extension, while in cases over one week he advises surgical removal of bone fragments. Wilson and Cochrane suggest dorsiflexion with the fingers immobilized in the position of grasp for three weeks followed by a short splint for four weeks. Most surgeons are doubtful in the prognosis of old carpal fractures, whether treated conservatively or operatively.

Grace immobilizes his acute cases either in bilateral moulded plaster splints or in a split roller case. The plaster extends from the tips of the fingers to the elbow. The thumb is abducted and the wrist placed in a cock-up position. The period of immobilization should be six to eight weeks, or longer if necessary, and the splint should be reapplied weekly. Snodgrass concludes from a study of 107 patients that those with obvious displacements should be operated upon at once. He advises surgical removal in that rather large group whose injury was diagnosed sprain without the use of x-ray, who had very little treatment, and now present themselves with a poor wrist. He feels that delay is a waste of time. In the early cases without displacement of fragments he advises conservative treatment, and surgery after three months if the former gives poor results.

Adams and Leonard report a case of a prize fighter on whom they did a graft operation, using a piece of bone from the tibia. They reported good results. McCauley uses the cock-up splint for ten days and employs massage and electric treatment as soon as the swelling subsides. Passive motion may be begun after nine or ten days provided no pain or swelling starts. If there is no improvement after five weeks he x-rays for arthritis and advises removal.

There have been groups of men in the past who favor extension, and others who have favored volar radial flexion as the position of choice in the treatment of scaphoid fracture. Berlin, in order to decide the position which would most favor surface to surface approximation of fragments, carefully dissected sixty wrists and lists the following five points as a result of his work:

1. The major portion of the ligamentous structure springing from the dorsal carpal ligament gains insertion on the proximal two-thirds of the dorsal surface of the scaphoid bone. Since the dorsal ligament is placed under tension with the hand in flexion, the scaphoid ligamentous slip, springing from it, is also made taut and pulls the proximal fragment from the distal.

2. The approximation of the broken fragments is distinctly favored by the tendons of the flexor

carpi radialis and the flexor pollicis longus. They act together as a sling to the scaphoid on its volar surface when the hand is placed in extension.

3. The small lateral interosseous ligament in the proximal row of the carpal bone is placed under tension when the hand is flexed to either side and in a minor degree displaces the fragments by tending to produce lateral angulation.

4. The radial collateral ligament stretching from the radial styloid to the tubercle of the scaphoid by the nature of its attachment, favors better alignment of fragments when the hand is extended to the radial side.

5. The position of choice in the treatment of carpal scaphoid fracture is about 45 degrees of extension of the wrist with radial deviation, avoiding extreme or forced extension.

#### CASE REPORT

My patient, a girl, fifteen years of age, was running across the street to escape rain by the shelter of her home. For some reason she fell lengthwise on the paving. Sensing the approach of an automobile she decided instantly that she did not have time to get up and run; hence, she rolled the rest of the way, striking and injuring the dorsoradial aspect of her left wrist just below the line of the radius, on the curbing. The diagnosis of sprain was made and the wrist bandaged, until an x-ray three or four days later showed a fracture of the scaphoid, with the fragments in a good position. The wrist and thumb were immobilized for three weeks with a plaster of paris cast. She came back three or four months later with limited ability to flex or extend her wrist, and a weakened grip. The patient complained of dropping plates, due to acute pain, when she set the table. An x-ray examination four months after the injury showed the scaphoid healed. The disability acted like an arthritis which will disappear in time.

#### THE FINLEY HOSPITAL CLINICO-PATHOLOGIC CONFERENCES

#### CURABILITY OF CARCINOMA OF THE SKIN

L. G. ERICKSEN, M.D., Dubuque

The point in presenting this case is not that it is one of unusual interest but rather:

1. To refocus the attention of the physician on carcinoma of the skin, a very common type of skin lesion.

2. To emphasize the peculiar type of skin this patient presents.

3. To indicate the excellent results of treatment, especially if the patient is seen and treated early.

#### CASE REPORT

The patient, a white female, sixty-two years of age, had had what she termed a growth on the right side of her nose for several years. The lesion increased in size very slowly and two years ago the patient sought the advice of a physician who cauterized it at intervals with silver nitrate.



Fig. 1. Shows malignancy of right ala nasi.

About two months previous to admission the appearance of the lesion changed by rapidly increasing in size. At the time of admission (November 16, 1934), it was one by two centimeters in size; was beginning to ulcerate centrally and had the characteristic pearly border and small capillaries radiating from the center. The clinical appearance was characteristic of a squamous cell carcinoma. On the left ala nasi was a similar lesion also clinically a squamous cell carcinoma. The skin about the face was very thin and dry with numerous areas of pigmentation and keratosis. This is well demonstrated in the accompanying photographs. X-ray therapy was advised.

On November 16, 1934, the lesion on the right ala nasi was given 45 m.a. minutes at eight inch distance, 100 k.v., without a filter. In fourteen days the area treated was well broken down and it was thought this would be sufficient treatment. It was apparent on follow-up examination at the end of two months, however, that there was some malignant tissue still active and that the infiltration was deeper than was thought at first. Another treatment was given on January 15, 1935, using 50 m.a. minutes, eight inch distance, 110 k.v., and one millimeter aluminum filter. An ex-

amination on May 6, 1935, showed the lesion entirely healed. The area on the left nostril received a similar dose and it is believed that this will give a permanent cure. However, the patient will be followed closely at frequent intervals and further treatment will be given if indicated. She has also been instructed in regard to the general care of her skin to prevent the development of other lesions.

#### DISCUSSION

Each year approximately 3,000 patients die in the United States of carcinoma of the skin. It is believed that most of these deaths are preventable if present knowledge of cancer is fully utilized by the medical profession and the public. Of late the curability of many types of cancer and especially skin cancer is being emphasized. It is recognized that in most cases cure depends upon early diagnosis and efficient treatment. Therefore it is important for every physician to be familiar with all phases of this type of carcinoma.

The first general rule is to consider every chronic lesion of the skin in an adult to be carcinoma until proved otherwise. Malignancy must be eliminated as a possibility before any treatment is given. The reason for not recognizing these cases



Fig. 2. Shows malignancy of left ala nasi with multiple keratosis and areas of pigmentation.

earlier is probably because carcinoma is not considered until the lesion is far advanced. Too often various ointments and caustics are tried before a biopsy is taken and a diagnosis established.

The type of skin which this patient presents is very helpful in aiding the doctor at least to suspect malignancy. This type of patient possesses a skin which is fair, thin, very easily sunburned, and usually freckled with multiple areas of keratosis. When patients of this type are seen they



should be followed very closely because of the danger of the development of carcinoma. They should be instructed to take exceptional care of the skin by avoiding as far as possible undue exposure to wind and sunlight, by being fastidiously clean and by using suitable emollients. The keratotic area present at the time of observation should be destroyed with cautery or radiation and the patients should report at least every six months for a check-up. It is not uncommon for these patients to have multiple carcinomata when first seen. In our series of 152 patients with skin malignancy, ten had multiple lesions.

In treatment, radiation is to be preferred over surgery in the majority of cases both from the excellent results obtained and from an economic standpoint. The technic of radiation treatment will not be discussed other than to say it should be thorough. A sufficient area of apparently normal skin surrounding the lesion should be included in the treatment to be sure no tumor tissue is being left untreated; otherwise a recurrence is sure to develop. If the lesion is early and it is possible, the entire dose should be given at the first treatment as the tumor tissue is most sensitive to radiation at that time. The more treatment given, the more resistant the tumor cells become over a period of time.

Repeating the statement made previously in any adult patient who has any skin lesion which has been present one month or longer, malignancy must be ruled out before any treatment is given. The only sure way this can be done is with biopsy and microscopic examination. If one follows this rule in every case and immediate thorough treatment is given, there is no reason for any patient dying of carcinoma of the skin.

#### NATIONAL DISCOUNT AND AUDIT COMPANY

Further information received regarding the National Discount and Audit Company of New York has lead the Committee on Medical Economics to withdraw its approval of this agency. The original approval was based on answers to the regular questionnaire forms filled in by physicians who had used the services of the company in question. Such questionnaires were received from several prominent physicians in the east, indicating satisfactory relations with the National Discount and Audit Company. Information which has been secured since then, however, indicates that not all of the facts of the matter were revealed and the approval of this company by the Medical Economics Committee has been withdrawn.

#### CONVALESCENT SERUM

Alfred J. Platt, M.D., associate of Dr. Levinson in the work of the Samuel Deutsch Serum Center of Chicago, visited Des Moines April 29 and 30, to obtain measles and scarlet fever convalescent serum. The State Department of Health in cooperation with H. E. Ransom, M.D., Health Commissioner of Des Moines, completed arrangements for the coming of Dr. Platt. Blood was obtained from persons convalescent within the past three months from an attack of measles or scarlet fever.

Through the courtesy of the Samuel Deutsch Serum Center a third shipment of measles serum has been received by the State Department of Health. This serum is forwarded without charge to physicians, on request. A limited amount of scarlet fever serum is available also for use in prophylaxis or treatment of severe cases of scarlet fever.

Dr. Platt addressed a meeting of the Des Moines Academy of Medicine and Polk County Medical Society, Tuesday evening, April 30, on "The Preparation and Value of Convalescent Serum."

#### THE AMERICAN NEISSERIAN MEDICAL SOCIETY

The American Neisserian Medical Society was founded on June 12, 1934. It is dedicated to the promotion of knowledge in all that relates to the gonococcus and gonococcal infections, that improvement in the management of gonorrhea and a reduction in its prevalence may be attained. There are 115 charter members and the officers are: Dr. Edward L. Keyes, New York, honorary president; Dr. J. Dellinger Barney, Boston, president; Dr. P. S. Pelouze, Philadelphia, vice president; Dr. Oscar F. Cox, Jr., Boston, secretary and treasurer.

The society plans to carry out the following program:

- A. The scrutiny of the management of gonorrhea in both male and female.
- B. Clinical and laboratory research in the diagnosis, medical and social pathology, and the treatment of gonorrhea.
- C. Dissemination among the medical profession and the public of authoritative information concerning gonorrhea.

Membership is limited to:

- A. Residents of the United States or its territories, Canada or Mexico.
- B. Graduates of a medical school recognized by the American Medical Association.
- C. Those who are engaged in some phase of the management of gonorrhea.

Invitation to membership is extended to all qualified physicians who desire to work for improvement in the management of gonorrhea. Application blanks can be obtained from the secretary, Oscar F. Cox, Jr., M.D., 475 Commonwealth Avenue, Boston, Massachusetts.

STATE DEPARTMENT OF HEALTH

*Valter Liering*

MEETING OF THE STATE BOARD OF HEALTH

A meeting of the State Board of Health was held at Davenport, on Thursday, May 9, in conjunction with the annual meeting of the Iowa State Medical Society. Members present were Dr. E. M. Myers of Boone, president, Dr. C. E. Irwin of Cedar Rapids and Dr. H. E. Stroy of Osceola, secretary. Action was taken by the State Board of Health approving proposed changes in the Rules and Regulations of the department as outlined in the article published in the February number of the JOURNAL, pages 97 and 98. Proposed changes are in effect at this time including reduction of the regular period of quarantine or isolation of scarlet fever from twenty-eight to twenty-one days.

TYPHOID FEVER IN IOWA IN 1934

During 1934, 285 cases of typhoid fever were reported to the State Department of Health. In the same year 54 typhoid deaths were recorded. One or more cases occurred in forty-nine counties representing all sections of the state. Black Hawk, Boone and Polk counties reported the largest number of cases. Information pertaining to age, sex and date of onset of illness is available relative to 233 of the 285 reported cases. The distribution of cases according to age and sex is indicated in Table I.

TABLE I  
Age and Sex of 233 Typhoid Cases

Age Group	Male	Female	Total No.	Per cent
Under 1 year.....	0	0	0	0.0
1- 4 years .....	3	10	13	5.6
5- 9 years .....	20	14	34	14.6
10-19 years .....	40	30	70	30.0
20-29 years .....	22	15	37	15.9
30-39 years .....	13	17	30	12.9
40-49 years .....	7	13	20	8.6
50-59 years .....	4	6	10	4.3
60-69 years .....	2	3	5	2.1
70-79 years .....	2	4	6	2.6
80 plus .....	0	0	0	0.0
Age not stated.....	6	2	8	3.4
Totals .....	119 (51.1%)	114 (48.9%)	233	100.0

Onset of Illness

The date of onset of illness of reported cases of typhoid fever is shown in Table II and Figure I. Cases represented in the first column of the table and by the dotted line of the diagram are exclusive of those associated with milk-borne outbreaks. Total reported cases are indicated in the second column and by the solid line in Figure I.

TABLE II

Date of Onset	No. of Cases Excluding Milk-borne Outbreaks	Total No. of Reported Cases
March 1-15 .....	2	2
March 16-31 .....	0	0
April 1-15 .....	0	0
April 16-30 .....	0	0
May 1-15 .....	2	2
May 16-31 .....	0	0
June 1-15 .....	1	1
June 16-30 .....	3	3
July 1-15 .....	7	21
July 16-31 .....	14	20
August 1-15 .....	25	25
August 16-31 .....	26	36
Sept. 1-15 .....	27	41
Sept. 16-30 .....	11	33
Oct. 1-15 .....	8	33
Oct. 16-31 .....	3	4
Nov. 1-15 .....	2	2
Nov. 16-30 .....	1	1
Dec. 1-15 .....	0	0
Dec. 16-31 .....	0	0
Not Stated .....	9	9
Totals .....	141	233

Excluding cases associated with milk-borne outbreaks of typhoid fever which occurred at Waterloo, Boone and Fontanelle in 1934, there were 141 cases, representing what is often designated "residual" or endemic typhoid fever. Information regarding these cases has been taken from typhoid fever case record forms returned to the department through the interest and cooperative effort of attending physicians and local health officers.

1. Urban and rural distribution

One hundred and four or nearly three-fourths of the group of 141 cases occurred in cities with a population of 1,000 or over. Of 45 cases in Polk county, all but three were in Des Moines.

2. Water supply

Well water was used by 83, or 59 per cent of the 141 patients and city water by 43, or 30 per cent. Only four per cent used a varied supply, including water from springs or cisterns. In the remaining seven per cent of the records no statement was made as to the kind of water used.

3. Milk

In 100 case records containing the desired information it was stated that raw milk had been used by 71 per cent, raw and pasteurized by one per cent, and pasteurized milk by 28 per cent of the typhoid patients during the period of four weeks prior to the onset of illness.

4. Excreta disposal

In 88, or 62 per cent of the group of cases concerned, an outdoor toilet served as the method of excreta disposal. The sewer was mentioned in



42, or 30 per cent of the records and the septic tank in one instance. Seven per cent of the records made no mention of the type of disposal.

5. Flies  
Thirty-nine case records indicated the presence of many flies.

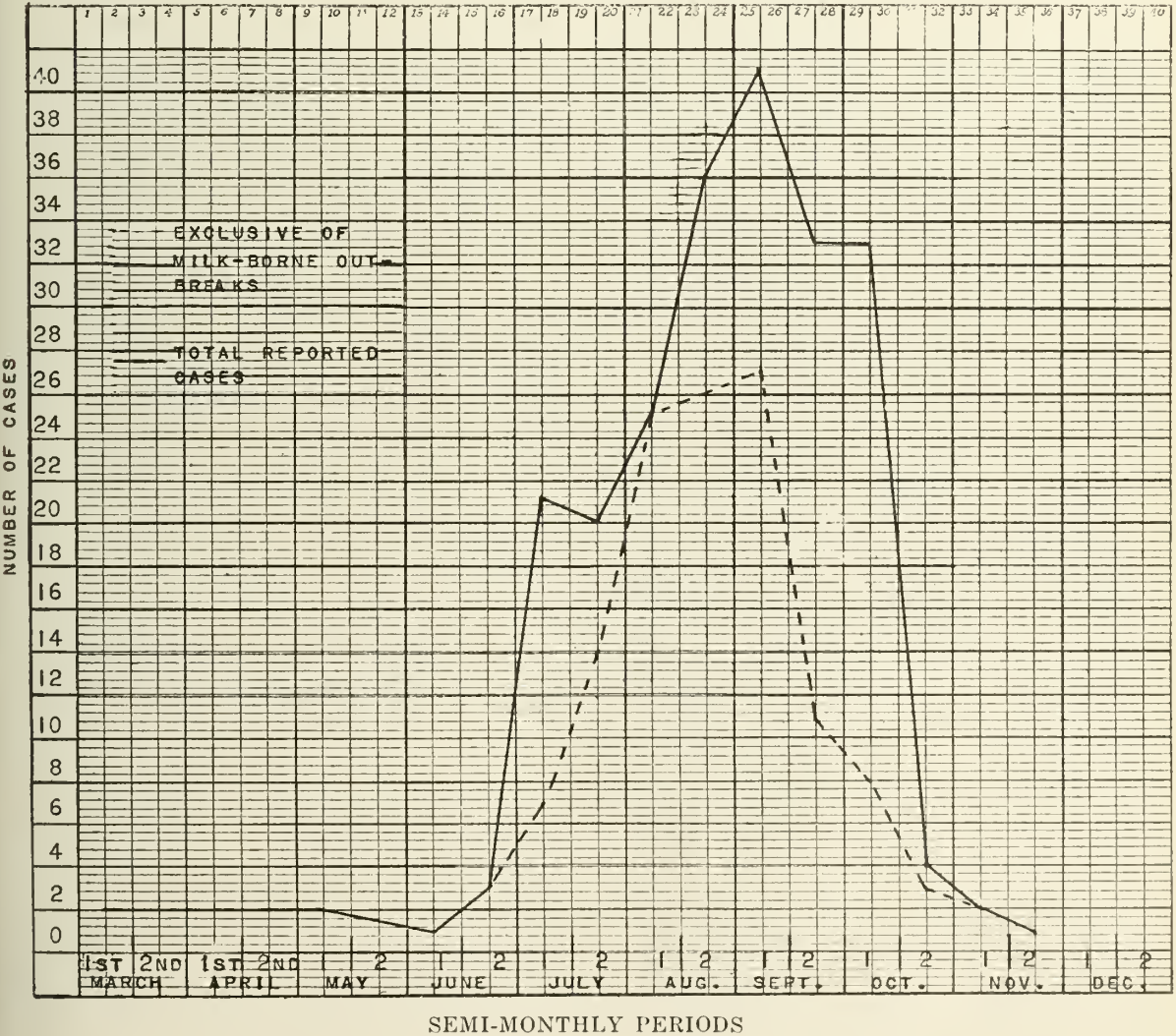
6. Past history of typhoid fever  
It is significant that in 27 of the records, inquiry revealed the fact that some member (or relative) of the family gave a positive history of typhoid fever in the recent or remote past.

**Demonstrating Typhoid Carriers**  
Typhoid carriers apparently play a major part directly or indirectly in causing most of the scattered or endemic cases of the disease. In patients who have been at home during the month preceding the onset of illness, there usually is less difficulty in establishing the source of infection. The listing on the typhoid case record of names and ages of all members of the household and the notation regarding the year of a previous attack of typhoid fever on the part of parents, grandparents or other near relatives, are of

great help in determining the probable origin of illness. During 1934, investigations and data made available on case records by attending physicians and health officers led to the discovery of six typhoid carriers. It is hoped that with the aid of physicians and laboratory workers, the source of infection may be definitely established in a greater number of reported cases in the current year.

PREVALENCE OF DISEASE				Most Cases Reported From
	Apr. '35	Mch. '35	Apr. '34	
Diphtheria .....	45	40	39	Black Hawk, Woodbury
Scarlet Fever ...	370	367	243	Dubuque, Black Hawk
Typhoid Fever ..	3	15	0	Black Hawk, Mahaska, Woodbury
Smallpox .....	22	9	26	Ida, Washington
Measles .....	3,393	5,509	976	Polk, Dubuque
Whooping Cough	78	60	267	Dubuque, Woodbury
Cerebrospinal Meningitis ....	16	8	9	Polk, Woodbury
Chickenpox .....	254	233	245	Polk, Woodbury
Mumps .....	1,381	689	313	Polk, Dubuque
Poliomyelitis ....	0	1	0	
Tuberculosis .....	33	36	24	(For State)
Undulant Fever ..	6	7	8	(For State)
Syphilis .....	116	121	117	(For State)
Gonorrhea .....	148	140	131	(For State)

TYPHOID FEVER IN IOWA IN 1934—DISTRIBUTION BY ONSET OF SYMPTOMS



# The JOURNAL of the Iowa State Medical Society

ISSUED MONTHLY

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## THE YOUNG PHYSICIAN

Very shortly, nearly four thousand young physicians will be graduated from the colleges and universities of this country. These graduates will replace a like number of hospital internes who will now seek locations for practice in communities of their selection. To their older colleagues in practice, these young physicians may become a source of annoyance or inspiration, depending entirely upon the attitudes and personalities of each. The pledging may be denied a welcome because of an attitude of "know-it-all." He may look with thinly veiled contempt upon the "old fogey" who has not been privileged to learn the newer diagnostic methods of the modern teaching hospitals. He may forget and underestimate the art of practice attained through years of careful study in the sick-room. He may be so foolish that he feels his success can be assured without fraternal fellowship and cooperation. It will be tragic indeed if any of these factors should mar his reception into the medical circles of his chosen location, but the onus does not rest solely upon the newcomer. How will the older, well established physician receive his junior colleague? Will he look upon him as a dangerous competitor to be belittled, shunned and discouraged? Will he feel that his more modern training, his more recent preceptorship in the seats of learning, or his more refined and precise methods of diagnosis make him an intolerable competitor? Will he forget his own early struggles in practice and deny the beginner those words of inspiration and encouragement which may spell his success or failure? Age and youth rarely meet without profit to each. Youth may learn the wisdom of experience. Age is rejuvenated by the freshness and vigor of youth. Competition may be a friendly striving for perfection and respect as

a reward of excellence, or it may be spoiled by jealousies and misunderstandings. As the one ennobles the practice of the healing arts, so the other destroys and makes commonplace a time honored profession.

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## THE NARCOTIC PROBLEM

Introduced as a boon to mankind certain pain relieving drugs, chiefly the opium derivatives and cocaine, have through their abuse become a menace to the American community. While there are no means of accurately determining the number of addicts in this country, it has been estimated that as many as two million persons may be affected. In spite of strict laws controlling the importation of these drugs into the United States and definite regulatory laws concerning their use, the federal authorities have been unable to control the illegal traffic in these habit-forming narcotics.

With less than 250 narcotic agents to guard 20,000 miles of coast line and 4,000 miles of border, it is obviously impossible to cope with the smuggler. With smuggling ineffectively controlled, regulatory laws (e. g., The Harrison Law) are insufficient to control the illegal sale of narcotics to addicts. The federal government, appreciating these facts, has, during the past few years and chiefly under the auspices of the National Research Council, devised new methods of approach which would seem more effective in dealing with this problem. First, working through a nation-wide chain of anti-narcotic committees, the Council is attempting to amass all possible data relating to this problem as rapidly as possible. Second, with governmental backing, research chemists at the University of Virginia are attempting to produce new drugs with narcotic efficiency, which have little or no habit forming properties. These new drugs are then tested experimentally in the medical laboratories of the University of Michigan.

This line of investigation follows closely that inaugurated just before the World War when research chemists demonstrated that in cocaine three elements enter into the molecule. One part produces a narcotic effect, the second part is related to nicotine, while the third part contains the deadly alkaloid hemlock. By eliminating the more dangerous parts of the molecule a cocaine-like substance called novocaine was produced. Novocaine is considered as a non-habit forming drug. It is hoped that this same line of research may be effective with other narcotic drugs, although the research chemists are not limiting their search to analytic studies, but are also attacking the problem from the standpoint of synthetically producing a new non-habit forming compound which may re-



place and render unnecessary the use of the older habit forming drugs. Success has already marked this endeavor, since within the past few months the University of Virginia has announced a non-habit forming drug to replace morphine. This substance, a morphine derivative, is designated as dihydrosesoxymorphine-D, and the drug is now being commercially manufactured under government license.

By act of Congress in 1929 a third avenue for the control of this evil was authorized. This legislation is directed towards the rehabilitation and reformation of addicts. The act provided for the establishment of two large federal farms for this purpose. The first of these farms has been recently completed at Lexington, Kentucky,\* and will care for approximately 1,000 patients.† Official announcement has been made that this farm was opened for the reception of patients on or about May 1, 1935. "Experiments are to be carried on to determine the best methods of treatment and research in this field, and the results disseminated to the medical profession and the general public to the end that states may make some provision for establishing a similar policy for helping to solve the problem of drug addiction. The function of the institution at Lexington therefore assumes the character of a treatment and research center of an educational and rehabilitation center with certain custodial features superimposed."

This attitude toward the drug addict is distinctly a forward step, since the public policy in the past has regarded these unfortunate persons solely as objects for penal or correctional attention without recognition of the medical, sociologic or economic aspects of the problem.

#### COLLEGES TO DEBATE MEDICAL ECONOMICS

During the past five years, some of the best minds in this country have directed their attention to a painstaking study of scores of plans advanced or designed "to provide an adequate medical care for all persons rich and poor alike." The problem has been studied through the eyes of the sociologist, the economist, the philosopher, the idealist, and the physician. Apparently no common ground of agreement has been found. During the past year the President of the United States through his Secretary of Labor has created a committee to weigh existing factual studies, and upon a basis of this study, recommend to him a feasible and working plan. This distinguished

committee has not yet arrived at a final report. Scarcely a newspaper or magazine of general interest has failed during the past year to carry some discussion of this problem. Public interest has been aroused by these comments and it is therefore not surprising that lay organizations have become actively interested in the subject.

As physicians, we would not decry or belittle this public interest since the matter involved is one intimately connected with the public health. On the other hand, discussions by uninformed persons or those based upon inadequately weighed facts are much more likely to befog than clarify the issue. A recent announcement from the Committee on Interstate Cooperation of the National University Extension Association announces the subject for national debate for next year as: "Resolved: That the several states should enact legislation providing for a system of complete medical service available to all citizens at public expense." In choosing this proposition the national committee proposes that some 100,000 students in high schools, colleges and universities throughout the nation will engage in the active debate of this problem. These debates will be heard by large and small audiences in auditoriums and over the radio so that the ultimate number of persons informed and perhaps influenced by the debate will be stupendous. The announcement reads: "Past experience has demonstrated that public interest generally will be stimulated."

In our opinion, the debate of this subject by these two groups suggested will have little or no influence on the ultimate conclusions reached, or the form which future practice may take, since every audience must appreciate the immaturity of the debaters and their insufficiency in forming mature and sound judgment. The evolution of medical practice to the needs of this and a future period cannot and should not be molded by a public opinion created in high school or college debates. Public sentiment, as variable as the winds of the heavens, may be altered by any opinion offered or any debate advanced, but the solution to this important question will come through much more mature and seasoned channels.

#### DINITROPHENOL NOT HARMLESS

Since the announcement of alpha-dinitrophenol as a useful drug in the treatment of obesity in 1933, a modest literature has developed concerning the use of this agent. In the *Journal of the American Medical Association* for December 22, 1934, the uses and dangers of the drug have been thoroughly discussed editorially. We would call especial attention to this editorial and recommend its careful reading by any physician contem-

\*The second federal narcotic farm will be opened at a later date and will probably be established in the western part of the country.

†Regulations governing the admission of persons to the United States Narcotic Farm, effective April 1, 1935, are given in detail in the *Journal of the American Medical Association* for February 16, 1935, page 574.

plating the use of this drug, and would stress particularly the last paragraph of the editorial, calling attention to the dangers in the indiscriminate use of the drug and the careful check and supervision by a competent physician which is required in every case.

Alarmed by the "reducing rackets" which have "sprung up like mushrooms all over the country and are endangering the lives of patrons," the United States Department of Agriculture through the Food and Drug Administration personnel has issued a statement and warning to the lay press. This warning indicates that racketeers are selling dinitrophenol and related compounds in fat reducers in spite of reports of deaths caused by these compounds through reliable medical sources. They further point out that the Federal Food and Drugs Act has no jurisdiction over products of this type and all that they can do "is to warn the public that these compounds are dangerous." All authorities agree that these drugs, in common with many others employed for a similar purpose, may be useful when properly adapted to the needs of the individual patient, provided there are no contraindications for their use. They are all capable of producing disagreeable, and even fatal, toxic signs and for this reason should not be employed except under a physician's direction where his personal supervision can be maintained at all times.

Warning has especially been given concerning the use of these drugs in individuals suffering from chronic rheumatism, alcoholism, tuberculosis, or diseases of the heart, liver or kidneys. While these drugs should be considered as definitely valuable for use by the physician in cases of obstinate obesity, it is quite evident that these drugs should not be permitted in sales of "treatment" to the public where medical supervision is not contemplated.

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#### THE NEWLY ORGANIZED MISSISSIPPI VALLEY MEDICAL SOCIETY

A new medical organization to be known as the Mississippi Valley Medical Society was formally organized at Quincy, Illinois, on Monday, April 8. The sole purpose of the new society is to hold an annual meeting each fall devoted to intensive post-graduate instruction, conducted by leading clinical teachers of the United States. The programs will be eminently practical and of particular interest to the general practitioner.

The society will especially appeal to the physicians of Illinois, Missouri and Iowa, and the annual meetings will be held in cities on the Mississippi River in these states. The control of the organization is in the hands of a Board of Directors, consisting of one director to each one thousand physicians in the states

of Illinois, Missouri and Iowa. Officers elected to serve for 1935 are:

President—Dr. Walter Stevenson, Quincy, Illinois.

President-elect—Dr. H. B. Goodrich, Hannibal, Missouri.

First Vice President—Dr. H. P. Coleman, Canton, Illinois.

Second Vice President—Dr. E. A. Cunningham, Louisiana, Missouri.

Third Vice President—Dr. William Rankin, Keokuk, Iowa.

Secretary and Treasurer—Dr. Harold Swanberg, Quincy, Illinois.

An Advisory Committee, including the following prominent physicians, has been elected by the Board of Directors: Dr. Walter Bierring, Des Moines; Dr. Allen Pusey, Chicago; Dr. A. D. Bevan, Chicago; Dr. Malcolm Harris, Chicago; Dr. Charles B. Reed, Chicago; Dr. E. Lee Miller, Kansas City; Dr. Thomas A. Burcham, Des Moines.

Membership in the society will be open to all ethical physicians who are in good standing in their own state medical societies. The Board of Directors has placed the membership fee and dues for the first year at \$3.00; charter membership will close July 1, 1935. Members will attend the annual meetings without payment of a registration fee. The first annual meeting of the organization will be held at the Lincoln-Douglas Hotel in Quincy, Illinois, on October 2, 3 and 4, 1935.

Those members of the Iowa State Medical Society who are interested in the new group should communicate with Dr. Harold Swanberg, at 211 W. C. U. Building, Quincy, Illinois.

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#### TWO MEDICAL MEETINGS OF INTEREST TO IOWA PHYSICIANS

The Medical Sciences Section of the American Association for the Advancement of Science, and the Minnesota State Medical Association will hold a joint session in Minneapolis, June 24, 25 and 26. Monday night, June 24, the principal speaker for the combined groups will be Dr. William P. Murphy of Harvard Medical School, 1934 Nobel prize winner in medicine. His subject will be "Diseases of the Blood." Featured for the second joint session, to be held the following morning, will be a symposium on blood diseases. Completing the morning program, Dr. L. W. Sauer, associate in pediatrics, Northwestern University Medical School, will speak on "The Prevention of Whooping Cough with Bacillus Pertussis Vaccine."

Members of the Iowa State Medical Society are cordially invited to attend the meeting, which promises to be a most exceptional one. From the point of its speakers alone, the program is expected to attract wide interest. In addition there are to be a large number of outstanding scientific demonstrations and exhibits, numbering nearly fifty, to which two hours of program time each day will be devoted exclusively.



## MEMBERSHIP

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One hundred per cent membership is a record of which any county medical society should be very proud. It speaks well for the feeling of harmony which must exist among the doctors and for their efforts, particularly those of the secretary, in interesting all eligible physicians in their professional organization. Your Secretary takes great pleasure in announcing that the records indicate one hundred per cent membership in the following counties, with every eligible physician a member in good standing for the year 1935:

Adams  
Audubon  
Calhoun  
Chickasaw  
Emmet  
Henry  
Howard

Ida  
Marshall  
Sac  
Tama  
Van Buren  
Washington  
Wright

The following counties have either equalled or bettered their membership record of last year; that is, their 1934 membership is one hundred per cent for 1935, and in some counties, new or delinquent members have also paid their 1935 dues:

Carroll  
Cerro Gordo  
Clarke  
Clay  
Clayton  
Crawford  
Davis  
Decatur  
Delaware  
Dickinson  
Floyd  
Franklin  
Iowa

Jackson  
Jefferson  
Kossuth  
Lucas  
Lyon  
Madison  
Mahaska  
Mills  
Monona  
Plymouth  
Ringgold  
Sioux  
Warren

Winneshiek

Where do you and your county society stand in the matter of membership? Let's make every county one hundred per cent in 1935.

*Robt. L. Parker*  
Secretary

## SPEAKERS BUREAU ACTIVITIES

### DECORAH POSTGRADUATE COURSE

The Speakers Bureau Committee is conducting a postgraduate course of the clinic type at Decorah. It consists of five meetings, at which the following diseases of the genito-urinary tract will be discussed by the men named:

Glomerulo and Hypertensive Nephritis—Moses Barron, M.D., Minneapolis.

- A. Pathogenesis.
- B. Changes in the Blood and Urine.
- C. Diagnosis.
- D. Treatment.

Diagnosis and Management of Surgical Conditions of the Kidney—Waltman Walters, M.D., Mayo Clinic.

Diseases of the Urinary Bladder—William F. Braasch, M.D., Mayo Clinic.

Diseases of the Prostate—G. J. Thompson, M.D., Mayo Clinic.

Gonorrhea—

In the Male—N. G. Alcock, M.D., Iowa City.

In the Female—W. F. Mengert, M.D., Iowa City.

The meetings are being held in the hospital in Decorah, starting at four p. m. with a clinic, followed by dinner, after which formal talks will be made on the subjects taken up in the clinic. The first talk was given on May 14; the second on May 21; the third on May 28; the fourth will be given on June 4; and the final one will be given June 18. There will be no meeting during the week of June 10.

### POSTGRADUATE COURSES, SPRING AND FALL

During the spring the Speakers Bureau Committee conducted six postgraduate courses, for which more than three hundred men have been enrolled. The course at Council Bluffs had an enrollment of eighty-two; Leon, thirty; Independence, sixty-three; Hampton, sixty-eight; Emmetsburg, thirty-three; and Decorah, twenty-five. The comments on the courses have been enthusiastic, showing that the work of the men who have conducted the courses and given the lectures has been appreciated by those attending the meetings.

The committee has received four requests for postgraduate courses in various parts of the state this fall, and would be glad to hear at this time from any other communities which are interested in having a course. If you would like one, talk to your county society secretary so that he may learn how many men are interested, and send in your request. The preliminary planning of these courses is started the first of July, and the locations will be decided upon early

this summer. For that reason, it is desirable that all localities wishing a course write the committee at once.

The faculty of the medical college of the State University of Iowa will once more help the Speakers Bureau Committee by providing lecturers for these courses. In addition, the committee will furnish men for the laboratory course which was given so successfully this spring in northern Iowa, if there is a request for this course to be repeated.

The committee will be very glad to hear from any community interested in having a course, and will appreciate it if such requests reach them in June.

### RADIO TALKS

The Speakers Bureau Committee was very much gratified at the interest shown in its exhibit at the annual meeting at Davenport. From the rate at which the radio talks disappeared, it is evident that the doctors throughout the state are as much interested in them as is the lay audience which listens to the broadcasts. If any man was unable to get a copy of a talk he wanted at Davenport, the committee will be glad to send it to him if he will write in to the central office. The committee will also be glad to send copies of the radio talks given weekly to those physicians desiring them, since mimeographed copies are made in the office and mailed out to listeners who request them. If you would like to receive these weekly talks, send in your name to be put on the permanent mailing list. Then, when the mimeographed copies are made, one will be sent to you without further effort on your part.

Following is the schedule of radio broadcasts for June:

WOI—Wednesdays at 7:15 p. m.

WSUI—Mondays at 8:00 p. m.

June 5—Summer Care of the Skin.

J. F. Auner, M.D.

June 12—Hot Weather Meals.

Miss M. L. Giddings, assistant professor  
Dept. of Home Economics, State University of Iowa.

June 19—Cancer of the Stomach.

T. J. Irish, M.D.

June 26—Diabetes—The White Collar Disease.

Raymond Rice, M.D.

July 3—First Aid in Accidents.

Douglas N. Gibson, M.D.



# WOMAN'S AUXILIARY NEWS

*Edited by the Press and Publicity Committee*

MRS. OLIVER J. FAY, *Chairman*, 405 Thirty-seventh Street, Des Moines

## Sixth Annual Meeting of the Woman's Auxiliary

The Sixth Annual Meeting of the Woman's Auxiliary to the Iowa State Medical Society was held in Davenport, May 8, 9 and 10, with headquarters at the Blackhawk Hotel. A preconvention meeting of board members and county auxiliary presidents was well attended Wednesday morning. Mrs. James A. Downing presided over the program which brought encouraging reports of the year's activities from chairmen of the various committees.

Following the noon luncheon, the general meeting was called to order at two o'clock in the Gold Room of the Blackhawk Hotel. Mrs. Gordon F. Harkness of Davenport addressed the group welcoming them to the convention city, and Mrs. Tom B. Throckmorton of Des Moines responded on behalf of the visiting members in attendance. Dr. E. M. Myers of Boone, a member of the Board of Trustees of the Iowa State Medical Society, presented an excellent oration on women, entitled "The Eternal Feminine." Dr. Gordon F. Harkness of Davenport, president of the State Society, extended greetings to the auxiliary members, and the afternoon program closed with committee reports and the president's address reviewing the work of the year.

Wednesday evening entertainment was furnished in the form of a complimentary theatre party for all doctors' wives in attendance at the session.

The Thursday morning session was opened by an address by Dr. Thomas A. Burcham of Des Moines, president-elect of the Iowa State Medical Society. Dr. T. C. Denny, also of Des Moines, medical director of the State Emergency Medical Relief Administration in Iowa, gave a most instructive and interesting discourse on the procedure of his department in caring for the indigent sick in this state. A noon luncheon was held at the Rock Island Arsenal Club. Mrs. S. C. Red of Houston, Texas, a past president of the Woman's Auxiliary to the American Medical Association, was a guest of the occasion, and spoke on "What Auxiliary Means." After several musical selections, Mrs. Robert W. Tomlinson of Wilmington,

Delaware, now president of the national auxiliary, presented greetings and best wishes from the parent organization. The afternoon session closed with a talk by Colonel A. G. Gillespie, commandant of the Rock Island Arsenal, on "A History of the Rock Island Arsenal." The general banquet on Thursday evening at the Blackhawk Hotel was most enjoyable and well attended.

Featured at the Friday morning session was the annual election of officers, the results of which are:

### President Elect

Mrs. C. A. Boice, Washington

### First Vice President

Mrs. Harold A. Spilman, Ottumwa

### Second Vice President

Mrs. William R. Hornaday, Des Moines

### Third Vice President

Mrs. Benjamin S. Walker, Corydon

### Fourth Vice President

Mrs. K. W. Graham, Sioux City

### Secretary

Mrs. P. W. Beckman, Perry

### Treasurer

Mrs. Russell C. Doolittle, Des Moines

### Director

Mrs. James A. Downing, Des Moines

A postconvention board meeting was held at the close of the Friday morning session, presided over by Mrs. M. C. Hennessy, newly installed president of the Woman's Auxiliary to the Iowa State Medical Society.

No account of the days spent in Davenport would be complete without special mention of the charming graciousness of the doctors' wives, headed by Mrs. Frederick H. Lamb, in providing such splendid entertainment, and in making all visitors welcome to their city. The fact that this act was accomplished without the aid of an organized auxiliary in Scott County, is a testimonial to the ability, sincerity, and whole-hearted friendly cooperation of the wives of Davenport physicians.

## SOCIETY PROCEEDINGS

### Bremer County

The regular meeting of the Bremer County Medical Society was held at Mercy Hospital, Waverly, Friday, May 17. L. C. Kern, M.D., of Waverly, presented his annual report of the proceedings of the House of Delegates of the State Medical Society annual meeting for 1935. The report was comprehensive and thorough; brought out all the high points of the meeting, and was listened to with great interest by all present. It was left with the county secretary to be made a permanent record. Thomas F. Thornton, M.D., of Waterloo, spoke on Medical Economics, and gave a report as delegate to the American Medical Association. He also discussed the medical emergency relief plan as outlined by Dr. T. C. Denny. C. C. Smith, M.D., of Clarksville, state representative from Butler county, gave an interesting talk on the proceedings of the Forty-sixth General Assembly. T. U. McManus, M.D., also of Waterloo, spoke on the general attitude of the medical profession, bringing out the fact that the medical profession has done better in keeping the people well than the clergy has in keeping them good, or the legal profession in keeping them out of trouble. He also commended Dr. Denny highly. W. A. Rohlf, M.D., of Waverly, spoke briefly.

H. W. Rathe, M.D., of Waverly, moved that the State Society be urged to appropriate the sum of \$500 for the use of the medical library, and that as far as possible this motion be broadcast to the other county societies. This was seconded by Dr. Kern and carried.

F. R. Sparks, M.D., Secretary.

### Butler and Mitchell Counties

A special joint meeting of the Butler and Mitchell County Medical Societies was held at Greene on Monday, April 29. The following scientific program was presented by Mitchell county physicians after a six-thirty dinner: Resection of the Small Bowel, G. E. Krepelka, M.D., of Stacyville; Case of Pancreatic Cyst, J. O. Eiel, M.D., of Osage; and Diabetes Mellitus, Theodore Blong, M.D., of Stacyville.

H. G. MacLeod, M.D., Secretary.

### Cerro Gordo County

A symposium on gallbladder diseases was presented before members of the Cerro Gordo County Medical Society, Friday, May 24, by three physicians from the Mayo Clinic, Rochester, Minnesota: Charles Mayo, M.D., his son, Joseph J. Mayo, M.D., and C. F. Dixon, M.D.

### Cherokee County

The regular meeting of the Cherokee County Medical Society was held Monday, May 20, at the Sioux Valley Hospital in Cherokee. L. P. Ristine, M.D.,

reported on the House of Delegates of the recent annual session; and C. W. Ihle, M.D., of Cleghorn, read a paper on Medical and Economic Problems of Today.

### Johnson County

At a joint meeting of the Johnson, Cedar, Muscatine, Louisa, Washington, and Iowa County Medical Societies, held Wednesday, May 1, at the University Hospital in Iowa City, the following program was presented: Russell's Traction in Fractures of the Femoral Shaft, F. E. Hambrecht, M.D.; A Case of Popliteal Cyst, M. D. Gardner, M.D.; The Factor of Age in the Mortality of Acute Appendicitis, A. C. Pattison, M.D.; Demonstration of Supracondylar Fractures of the Humerus, M. T. Bates, M.D.; and Convulsive Seizures in Adult Life, A. E. Walker, M.D.

Horace M. Korns, M.D., Secretary.

### Linn County Annual Meeting

The annual election of officers for the Linn County Medical Society was held at the Hotel Roosevelt in Cedar Rapids, Thursday, May 2. Dr. John R. Gardner of Lisbon assumed the office of president; and the following other officers were elected: Dr. V. H. Hasek, vice president; Dr. T. F. Hersch, secretary; Dr. Emma J. Neal, treasurer; Dr. T. F. Suchomel and Dr. J. K. von Lackum, delegates; and Dr. H. L. Van Winkle and Dr. John Hamilton, alternate delegates.

### Sac County

The Sac County Medical Society met at the hotel in Odebolt on Thursday, May 16, for a dinner and business session. Twelve members were present. The application of Dr. C. D. Gibson for membership was received and acted upon favorably. Dr. Gibson has just opened an office in Lake View. The society is now one hundred per cent, every physician in the county being a member in good standing of the society. An excellent paper on Arteriosclerosis and Hypertension was read by G. H. Bassett, M.D., of Sac City, followed by an adequate discussion. The society will next meet at Twin Lakes, Rockwell City, on June 25, when the Twin Lakes District Medical Society holds its annual meeting.

J. R. Dewey, M.D., Secretary.

### Washington County

The Washington County Medical Society held its regular monthly meeting, Tuesday, April 30, following a six-thirty dinner. Paul A. White, M.D., and A. A. Garside, M.D., both of Davenport, furnished the scientific program, with illustrated lectures on Urological Problems.

W. S. Kyle, M.D., Secretary.



### Iowa Clinical Surgical Society

Saturday, April 20, members of the Iowa Clinical Surgical Society, met in Des Moines. An especially appointed committee prepared the following resolution, which was passed unanimously:

Whereas, the Great Physician has seen fit to remove from our midst Dr. Wilton W. McCarthy of Des Moines, Dr. P. B. McLaughlin of Sioux City, Dr. P. A. Bendixen of Davenport, and Dr. John F. Summers of Omaha, Nebraska, whose wise counsel, the growth of intimate knowledge of the science of our profession, and whose cheering fellowship endeared them to us beyond expression, the vacancy left in our midst by their demise is one which shall be difficult, if not impossible to fill;

Be it resolved, that the society extends to their families our utmost sympathy in the loss of their loved ones.

Sioux City was selected as the next meeting place, and the time, the fourth Saturday in September. Officers were elected as follows: Dr. J. E. O'Keefe of Waterloo, president; Dr. H. E. Pfeiffer of Cedar Rapids, vice president; and Dr. E. A. Jenkinson of Sioux City, secretary and treasurer.

E. A. Jenkinson, M.D., Secretary.

### Northwest Iowa Medical Society

The spring meeting of the Northwest Iowa Medical Society was held at the Arlington Hotel in Sheldon, Tuesday, April 22. Following the six-thirty banquet, W. Eugene Wolcott, M.D., of Des Moines, addressed the group on Fractures in General; and R. D. Bernard, M.D., of Clarion, spoke on An Interpretation of the Basic Science and Osteopathic Bills.

### Twin Lakes District Medical Society

The Twin Lakes District Medical Society will meet in Rockwell City, Tuesday, June 25. Outstanding speakers who will address the group include: L. A. Calkins, M.D., of Kansas City; Morris Fishbein, M.D., of Chicago; H. L. Kretschmer, M.D., of Chicago; Karl A. Meyer, M.D., of Chicago; S. Marx White, M.D., of Minneapolis; and F. A. Willius, M.D., of Rochester, Minnesota.

### PERSONAL MENTION

Dr. J. H. Gasson, formerly of Bedford, is returning to that city, after practicing in Red Oak for the past three and one-half years.

Dr. William Malamud and Dr. Andrew Woods, both of Iowa City, presented papers before the Ninety-first Annual Meeting of the American Psychiatric Association in Washington, D. C., Wednesday, May 15. Dr. Malamud discussed "The Material as It Organizes Itself with the Psychopathologist and Psychotherapist;" and Dr. Woods spoke on "Language Study in the Psychoses."

Dr. Charles F. Oberman, formerly of Clarinda, has accepted an appointment as assistant superintendent of the state institution at Woodward.

Dr. L. J. Hospodarsky, formerly of New Prague, Minnesota, is locating for the practice of medicine in Ridgeway. Dr. Hospodarsky was graduated in 1931 from the State University of Iowa College of Medicine, and served his internship at St. Luke's Hospital in Cedar Rapids.

Dr. Frank J. Murphy of Sioux City addressed the local Kiwanis Club, Thursday, May 2, on "The Influence of Instinct on the Mentality of Man."

Dr. Raymond Cohen, who has practiced medicine in Des Moines for the past two and one-half years, has located in Houston, Texas.

Dr. Leonard P. Ristine of Cherokee spoke before the child welfare department of the Women's Progressive Club, at Laurens, Tuesday, May 14. His subject was "How the Modern Rate of Living Is Affecting the Human System."

Dr. E. T. Plowman, after three years of practice in Lockridge, has located in Morning Sun.

### MARRIAGES

Miss Alberta Bauer of Iowa City and Dr. R. J. Hennes of Oxford, were united in marriage Monday, April 29, at St. Mary's Church in Iowa City. The young couple will make their home in Oxford, where Dr. Hennes has been practicing medicine for the past four years.

### DEATH NOTICES

Allen, Edward Clint, of Wayland, aged sixty-three, died suddenly May 18, as the result of a heart attack. He was graduated in 1898 from the St. Louis College of Physicians and Surgeons, and at the time of his death was a member of the Henry County Medical Society.

Jordan, Marion Sparehawk, of Clinton, aged seventy, died suddenly April 30, as the result of heart disease. He was graduated in 1901 from the University of Illinois College of Medicine, and at the time of his death was a member of the Clinton County Medical Society.

Niemack, Julius, of Charles City, aged seventy-five, died May 5, following a short illness. He was graduated in 1891 from Georg August-Universität Medizinische Fakultät, Göttingen, Prussia, and at the time of his death was a life member of the Floyd County and Iowa State Medical Societies.

Rich, Louis Philip, of Fredericksburg, aged fifty-nine, died May 5, following a prolonged illness of arthritis and angina pectoris. He was graduated in 1903 from Keokuk Medical College, College of Physicians and Surgeons, and at the time of his death was a member of the Chickasaw County Medical Society.

# HISTORY OF MEDICINE IN IOWA

*Edited by the Historical Committee*

\*DR. HENRY B. YOUNG, Burlington  
DR. FRANK M. FULLER, Keokuk  
DR. JOHN T. MCCLINTOCK, Iowa City

\* Deceased

DR. TOM. B. THROCKMORTON, Des Moines  
DR. WALTER L. BIERRING, Des Moines  
DR. WILLIAM JEPSON, Sioux City

## A History of Medicine in Jefferson County, Iowa

JAMES FREDERIC CLARKE, M.D., F.A.C.S., Fairfield

(Continued from last month)

During 1913, and after, clinics were held in the county hospital by Dr. C. P. Howard of the State University of Iowa, and others. Doctors of nearby towns were invited to read papers, and at the County Chautauqua assemblies, picnics were held by the county medical society. Dr. L. D. James was the secretary of the society at this time and the activities of the society were due to his initiative. No other doctor, in the memory of the writer, has so continuously stood for good society work. In spite of Dr. James' labors, however, a general inertia defeated his efforts and until a much later date the society meetings were not of great value.

### NURSING

\* On July 27, 1871, Dr. Shaffer said in his diary: "Oh that I had a good nurse." Many, many times every doctor has felt like making a similar exclamation. It is a secret known to the intelligent few, that in serious illnesses, good nursing is often of more importance than the doctor's pills and potions.

In the early days of this medical history the doctor himself did much of the nursing. The early doctors would stay for hours with their patients, giving enemas or baths, and applying blisters and poultices. Between these calls of the doctor, members of the family and neighbors did the nursing. It was true then that a case of typhoid fever incapacitated not only the patient but exhausted a whole family or a whole neighborhood. This neighborly assistance in time of illness among the early settlers of Jefferson county was one of the beautiful things of this pioneer life. Not that such practices were limited to the pioneer days for all through the years this neighborly kindness during suffering and illness has been manifest in Jefferson

county. The writer found in the British Museum an old Chinese manuscript, written in 1000 B. C., telling of how a farmer's neighbors, during his illness, harvested the sick man's crop. Commonly today this is done in Jefferson county. Truly the milk of human kindness flows through the ages unchanged. However warm the heart and however self-sacrificing the services of relatives and neighbors during illness, nursing is such an art and science that nurses need to be trained. Before the days of typhoid vaccine, a man of Fairfield took a friend, who was suffering with typhoid fever, and who was without a family, into his home and cared for him. Three members of this helping neighbor's family acquired typhoid fever and one died. The original patient recovered. Such tragedies through neighborly helpfulness were not uncommon. More frequently the unskilled nurses with the kindest intentions used irrational procedures which may have hastened the death of the patient.

Later in our history, from 1870 to the present time, unemployed women were hired as nurses. They are called now "practical" nurses in contradistinction to "graduate," "trained," or "registered" nurses. Splendid, conscientious, self-sacrificing women, were many of the "practical" nurses, but in serious illness they could not do all that the patient's best interests required. "Oh that I had a good nurse" was often the doctor's thought. The first graduate, "trained" nurse was brought from Philadelphia to Jefferson county in May, 1892; thirty-two years after the founding of Florence Nightingale's school. This nurse, Miss Eva Mullen, came to care for a patient who was taking the famed S. Weir Mitchell "rest cure." Since that date the number of educated nurses has increased steadily, and the Jefferson County Hospital



began graduating nurses in 1915. Now the number of registered nurses available is in excess of the demand.

Miss Elizabeth Heaton should be especially mentioned for her help to the doctors of this county when trained nurses were few. She was an educated nurse from the hospital at Galesburg, Illinois. She understood antisepsis thoroughly and was unsparing of herself in the care of the sick. She finally made her small house into a hospital for the care of surgical cases.

#### THE SPANISH WAR

In 1898 came the war with Spain. Jefferson county furnished a company of soldiers in which was J. S. Gaumer, afterward a Jefferson county doctor.<sup>66</sup> The only physician from the county going to this war was James Frederic Clarke,<sup>30</sup> Major Surgeon of the 49th Infantry. In the Florida camp Dr. Clarke was detached from his regiment and made head of the medical side of the second division hospital of the Seventh Army Corps, located in Jacksonville, Florida. This division hospital with a capacity of 700 beds was soon filled with typhoid fever cases. Dr. Clarke, long convinced of the value of trained women nurses, requested them for this army field hospital. This request shocked the regular army surgeon in command and he refused to consider "bringing women into the field," saying "A boy's comrades are his best nurses." Over the head of the Corps Surgeon, Dr. Clarke appealed to the governor of Iowa, Leslie M. Shaw. The governor persuaded Secretary of War Alger to allow him to send nurses to Jacksonville. Thus twenty-five women nurses were sent to the field hospital and were accepted by General Lee. These nurses proved such a success that the policy of employing women nurses in such positions was adopted by the army of the United States, and a Jefferson county volunteer doctor shares with Governor Shaw the credit of introducing female nurses into other than base hospitals of the army. Such a claim is confirmed by recent correspondence with the surgeon-general's office. In the World War this practice was universal. Female nurses were sent with shock teams even to advanced dressing stations. For this presumptive act, in sending his request for nurses over the head of the corps surgeon, Dr. Clarke was detached from the division hospital and sent back to his regiment, but a lieutenant nephew of the corps commander presented the facts to General Fitzhugh Lee, and Dr. Clarke was soon restored to his former position in the division hospital, and later given command of a convalescent hospital at the seashore. A simple instance of the revolution made by the women nurses in the care

of the sick was the demand for a comb by one on the day of their arrival. On this first day, a nurse came to the writer and asked for a comb to care for the sick men's hair. On search it was found that such an implement had not been used by a "comrade nurse" since the establishment of the hospital. This is a slight intimation of the transformation accomplished by these women nurses. To the many other good characteristics of Governor Shaw should be added his constant solicitude for the Iowa soldiers in the Spanish War. In this war, though the bullets injured few, the house fly killed many by spreading typhoid bacilli over the soldier's food. Studies in these Florida camps developed the indictment of *Musca domestica*; the most dangerous animal, next to the mosquito, in the world.

#### ANTISEPTIC SURGERY

Although Lister taught antiseptic surgery in 1867 it was nearly twenty years before antiseptics was used in the surgical operations in Jefferson county, and then a simple appendectomy was considered by the laity a serious procedure. In 1890 Dr. J. Fred Clarke, then an interne in the Philadelphia Hospital, transferred a patient from the medical ward to Dr. John B. Deaver's surgical services with the diagnosis "appendicitis." The next morning he met the doctor in a hospital corridor and Dr. Deaver said to him: "How did you know that case was appendicitis?" At that date "typhlitis," "peri" and "paratyphlitis" were much more common diagnoses, and that a mere interne should make a correct differential diagnosis was surprising. It was no more surprising to the surgeon than to the interne himself, who had chosen at random this one from four possible names. The writer believes that he performed the first appendectomy in Jefferson county in 1891. It is continuously surprising to read the notes of the early doctors and to discover how few surgical operations of any kind were done in Jefferson county before 1890. The people dreaded "the knife." The education of the laity to the fact that an operation gave less risk than allowing an appendix to rupture; that operations could be done without the production of "laudable pus" required years of labor. For his part in this education the writer was called a "butcher" and various like names.

#### ANTITOXINS

The army death rate during the Civil War of 97 per cent for blood poisoning and 89 per cent for tetanus was repeated in Jefferson county until long after the Civil War. Tetanus antitoxin was novel and not kept in drug stores in 1900. The writer remembers having telephoned to Chicago in 1900 for tetanus antitoxin for his first case of lockjaw

and of losing his patient because the material was delayed in arrival. Antitoxin had probably been used here before that date but was not commonly used. There was much hesitation about giving antitoxin because one sudden death in Fairfield from diphtheria paralysis followed immediately upon giving a hypodermic dose of diphtheria antitoxin. This occurrence prejudiced the whole community. Antitoxins for diphtheria and tetanus, although available in 1890, were not in general use in Jefferson county in 1900. It will be noted that after 1900 the advances in medical science were much more quickly introduced into Jefferson county than the improvements of the earlier dates. This was because of a world wide change in the profession. Laboratory and statistical investigations were everywhere replacing the older methods of following precedent theoretically. Science was displacing metaphysics. In 1930 the doctors of Fairfield donated their services, the women's club paid for the materials and all school children were given toxin-antitoxin for diphtheria immunization. This was repeated each year and diphtheria in Fairfield was abolished. In 1934 school children were given the tuberculin test for tuberculosis in the six upper grades of the schools.

#### THE COUNTY HOSPITAL

After years of ineffectual effort to have a local hospital the Jefferson County Hospital was built under the new Iowa county hospital law. Stimulated by the address of Dr. Boice of Washington at a county medical society meeting, as already mentioned, Dr. J. Fred Clarke was appointed early in 1912, a committee of one, to take charge of a campaign to carry a special election to sell bonds to build a hospital. Each local doctor was to give \$100 to create a fund for this campaign. Credit for local impetus given in the launching of this campaign is due Dr. L. D. James.<sup>93</sup> Coming to Fairfield in 1908 fresh from an internship in an excellent hospital he was full of enthusiasm, and renewed Dr. Clarke's hopes and efforts of twenty years to build a hospital. Dr. C. A. Boice of Washington furnished many ideas and much encouragement for this campaign. He had, in Washington county, built the first Iowa County Hospital under the "Munger" law. This law was called the "Munger" law because Dr. E. E. Munger of Spencer succeeded in getting it through the Iowa legislature.

Dr. Clarke obtained the permission of J. W. Dole, chairman of the Democratic County Committee; J. S. McKemey, leading "stand pat" republican, and Dillon Turney, the leading "progressive" in the county, to sign their names to all campaign material issued. By spending \$700 of his own money, besides that contributed by some

of the other doctors, Dr. Clarke began an active educational campaign which was successful in carrying the project at the polls; and \$25,000 of bonds were voted to build a hospital. This was the first time in the world (excepting in Washington, Iowa), when a rural people voted a tax on themselves to build a hospital. In every precinct outside of Fairfield the proposition lost by a small majority. Fairfield's preponderant majority carried the election.

This \$25,000 was used to erect the building. It was furnished and equipped by private donations. One of the chief of these donations was the furnishing of the operating room by the widow of Dr. Richard J. Mohr, then living in Pasadena, California, in memory of Dr. Mohr. Many citizens of Fairfield made liberal contributions to the hospital equipment, the result of which was that the people of Jefferson county acquired a \$50,000 hospital for the \$25,000 tax.

The first president of the hospital board was Mr. E. D. Y. Culbertson and the first secretary Mr. Dillon Turney. They served in this capacity for years and with Mr. Lucian Marcy, Mr. Charles W. Wade, Mr. John Fritz and Mr. Thomas Ross, made an efficient governing body. Miss Amy Beers, assistant superintendent of the Hackley Hospital of Muskegon, Michigan, was chosen as superintendent of the hospital and served for years.

It was at this time, in 1912, that Jefferson county surgeons first began to wear rubber gloves during operations. A revealing incident of this time (1914) illustrates the danger of poorly educated men being allowed to operate in rural hospitals. The operating room nurse in the Jefferson county hospital threw away one of the two pairs of rubber gloves owned by one of the surgeons, because they were full of holes. The doctor reprimanded this nurse for her wastefulness, saying: "Those were my obstetric gloves." Again we may remark; better a clean midwife than a surgeon with tattered gloves.

The Jefferson County Hospital, dedicated September 17, 1912, and opened October 2, 1912, became an efficient institution, with a training school for nurses. It developed a considerable reputation, and inquiries came from many states and Canadian provinces concerning this Iowa county hospital plan. The superintendent of this small hospital was twice elected president of the Iowa Nurses' Association, and served on the Board of the State Examiners of Nurses for several years. Miss Beers, prominent in state and national nursing circles, added to the distinction of this hospital. It was not long until farmers who had voted against the hospital changed their minds, and approved the local hospital idea.

(To be continued)



# THE JOURNAL BOOK SHELF

## BOOKS RECEIVED

**ANNUAL REPORT OF THE SURGEON GENERAL OF THE PUBLIC HEALTH SERVICE OF THE UNITED STATES—**For the fiscal year, 1934. United States Government Printing Office, Washington, 1934. For sale by the Superintendent of Documents, Washington, D. C. Price, seventy-five cents.

**THE AUTONOMIC NERVOUS SYSTEM—**By Albert Kuntz, Ph.D., M.D., professor of micro-anatomy, St. Louis University School of Medicine. Second edition, greatly enlarged and thoroughly revised. Octavo of 697 pages, illustrated with 73 engravings. Lea & Febiger, Philadelphia, 1934. Price, \$7.50.

**BODY MECHANICS IN THE STUDY AND TREATMENT OF DISEASE—**By Joel E. Goldthwaite, M.D., Lloyd T. Brown, M.D., Loring T. Swaim, M.D., and John G. Kuhns, M.D. J. B. Lippincott Company, Philadelphia and London, 1935. Price, \$4.00.

**HOW TO PRACTICE MEDICINE—**By Henry W. Kemp, M.D., New York. Paul B. Hoeber, New York, 1935. Price, \$2.50.

**INTERNATIONAL CLINICS—**Volume IV, Forty-fourth Series. Edited by Louis Hamman, M.D., visiting physician, Johns Hopkins Hospital. J. B. Lippincott Company, Philadelphia and London, 1934. Price, \$8.00.

**MORTALITY AMONG PATIENTS WITH MENTAL DISEASE—**By Benjamin Malzberg, Ph.D., New York State Department of Mental Hygiene, Albany, New York. State Hospitals Press, Utica, New York, 1934.

**OBSERVATIONS OF A GENERAL PRACTITIONER—**By William N. Macartney, M.D. Richard G. Badger, Publisher, The Gorham Press, 100 Charles Street, Boston, Massachusetts.

**PERIODIC FERTILITY AND STERILITY IN WOMAN—**A Natural Method of Birth Control—By Professor Herman Knaus, head of the clinic for gynecology and obstetrics, of the German University of Prague. With 64 illustrations and 12 tables. Wilhelm Maudrich, Publisher, Vienna, 1934. Price, \$6.50.

**REPORT ON SEVENTH INTERNATIONAL CONGRESS OF MILITARY MEDICINE AND PHARMACY—**Held in Madrid, Spain, May-June, 1933. By Captain William Seaman Bainbridge, M.C.-F., U.S.N.R. George Banta Publishing Company, Menasha, Wisconsin, 1934.

**SURGICAL APPLIED ANATOMY—**By Sir Frederick Treves, Bart. Ninth edition, revised by C. C. Choyce, M.D., professor of surgery, University of London. Illustrated with 174 figures, including 66 in color. Lea & Febiger, Philadelphia, 1934. Price, \$4.00.

**THE YEAR BOOK OF GENERAL MEDICINE, 1934—**Edited by George F. Dick, M.D., Lawrason Brown, M.D., George R. Minot, M.D., William B. Castle, M.D., William D. Stroud, M.D., and George B. Eusterman, M.D. The Year Book Publishers, Inc., Chicago, 1934. Price, \$3.00.

**THE YEAR BOOK OF GENERAL SURGERY—**Edited by Everts A. Graham, M.D., professor of surgery, Washington University School of Medicine. The Year Book Publishers, Inc., Chicago, 1934. Price, \$3.00.

## BOOK REVIEWS

### FEMALE SEX PERVERSION

By Maurice Chideckel, M.D., with a foreword by S. Wolman, M.D., associate in medicine, Johns Hopkins University. Eugenic Publishing Company, 317 East 34th Street, New York City. Price, \$6.00.

This volume covers in a semi-technical fashion the many aberrations in sex functions commonly recognized in standard works on this subject. Because of its straightforwardness and easily understood phrasing, the volume will especially appeal to the layman whose work may extend into the field of sexology.

The author has drawn from his own case records for material to illustrate many of the conditions described, and these case records add material interest to the treatise. In thirty-nine chapters the author describes and illustrates by case records all of the abnormal sex manifestations of the female, observed in either the sane or the insane, and in each instance attempts a psychologic interpretation of the genesis of the disorder. All psychologists and psychiatrists will not agree with the author in these premises, but regardless of their accuracy they do offer a workable foundation for the consideration of these perverted erotic manifestations and serve a most useful function in clarifying the deranged psychic seen in these conditions. The physician whose interest in this subject is insufficient to carry him through a voluminous and thorough technical discussion of female sex perversions will benefit materially by a careful review of this volume, although it is obviously prepared primarily for the lay reader.

sions will benefit materially by a careful review of this volume, although it is obviously prepared primarily for the lay reader.

### THE AUTONOMIC NERVOUS SYSTEM

By Albert Kuntz, Ph.D., M.D., professor of micro-anatomy, St. Louis University School of Medicine. Second edition, enlarged and thoroughly revised. Illustrated with 73 engravings. Lea & Febiger, Philadelphia, 1934. Price, \$7.50.

The volume represents a detailed study of the sympathetic and parasympathetic nervous system. The author has made a detailed study of the physiology and stresses the experimental work that has been done as well as his own observations and conclusions. He has personally proved many of the questionable experiments.

The histologic distribution of the sympathetic and parasympathetic nervous system has been well brought out. The embryology is well written and of great interest. The extensive bibliography of 117 pages, of about 2,500 references is of interest to anyone who wishes to consult the literature.

The volume is a practical addition to the library of anyone who is practicing medicine or surgery because of its close application to the normal physiology of the human body and the recent advances in the relation of the autonomic system to the practice of modern methods.

D. M. B.

## INTERNATIONAL CLINICS

Volume IV, Forty-fourth Series. Edited by Louis Hamman, M.D., visiting physician, Johns Hopkins Hospital. J. B. Lippincott Company, Philadelphia and London, 1934. Price, \$3.00.

Maintaining the high standard of efficiency long established, the editor of this series of these clinical volumes has collected in this particular issue many essays and articles of exceptional value. Particularly pleasing to the reviewer was the very complete discussion of Vitamin B from the clinical aspect by Dr. George R. Cowgill; the article entitled "Nondiabetic Glycosuria" by Alexander Marble; and a contribution to gynecology by Dr. Karl H. Martzloff in his discussion of the recognition of early cancer of the cervix uteri. A total of sixteen clinical papers are presented.

## MEDICAL CLINICS OF NORTH AMERICA

Volume xviii, No. 3. New York Number; 301 pages with 17 illustrations. W. B. Saunders Company, Philadelphia and London, 1934. Price, paper, \$12.00; cloth, \$16.00.

The New York Number of the Medical Clinics offers the usual interesting array of topics in general medicine.

Harlow Brooks contributes a satisfactory study on cardiac failure. There is a comprehensive article on the lymphadenopathies and a very readable discussion of amebiasis. This latter is by no means the rather unusual disease which many have considered it to be; that is, unusual for our country, and generally thought to be limited to the tropics except for sporadic cases. It is now known that the disease is widely distributed, affecting from five to ten per cent of the population of this country. Unlike other infectious diseases the more acute the symptoms the less the risk of infection. Symmers of Bellevue Hospital reports his observations on the use of antitoxin in erysipelas; 4,698 patients received this treatment and a study of his results shows a reduction in the mortality rate and a marked shortening of the course of the disease. Other articles of practical interest are included in the volume.

F. R. H.

## THE SEXUAL HISTORY OF THE WORLD WAR

By Dr. Magnus Hirschfeld. Three volumes in one. The Panurge Press, 70 Fifth Avenue, New York City, 1935. Price, \$5.00.

This translated work is by far the most complete and thorough discussion of this subject which has come to our attention. The work is edited by a competent authority, assisted by eleven collaborators versed in this subject.

Preceding the writing of this text an invitation was sent to soldiers of every land to contribute fac-

tual information in their possession, and it is from this source, together with those published studies and documental evidence obtained through official sources, that this work is based.

As might be expected, since the studies were conducted in Germany, a greater stress is laid upon eroticism in the German and Austrian armies than among the other participants in the war. The treatise is divided into three volumes. The first deals with the release of sexual restraints due to war conditions and the sexual abnormalities manifested under war conditions. A most valuable chapter in this volume deals with venereal diseases, their frequency, control and methods of investigation. Volume two discusses various forms of prostitution, while the third section has to do largely with abnormalities in erotic manifestations.

The authors do not claim completeness for their work, but the unbiased reader is immediately impressed with the wealth of material studied, the thoroughness of their investigation, and the reasonableness of the conclusions drawn. The book is obviously designed for the mature student of sex.

## SURGICAL DISEASES OF THE CHEST

By Evarts A. Graham, M.D., professor of surgery, Washington University School of Medicine, St. Louis. Illustrated with 637 engravings. Lea & Febiger, Philadelphia, 1935. Price, \$15.00.

The author of this work, long recognized for his preëminence in this particular field, is unusually well qualified both as a clinical teacher and as an active practitioner, for the preparation of this text. He has apparently kept the requirements of the internist as well as the surgeon, conspicuously in mind, since his book gives definite insight into the management of chest cases, their prognosis, preoperative and post-operative care, as well as a careful description of the operative procedures employed. The surgeon will find none of the essential aspects of operative technic and procedure neglected, and many operations are described in detail and illustrated by well chosen photographs. This book reflects the latest advances in the rapidly expanding field of thoracic surgery. It discusses the choice of anesthesia and its administration, the diseases of the pleura, the mediastinum, the heart and pericardium, their diagnosis, management and surgical treatment, bronchoscopy and bronchography, diseases of the lung including tuberculosis, and finally a description of the chest service as arranged at Barnes Hospital.

To those acquainted with the works and publications of these authors, especially those of Dr. Graham, this book will need no recommendation. To those not familiar with the authors we unhesitatingly commend this important work as distinctive among similar studies and unquestionably authoritative and complete.



# The JOURNAL

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## Iowa State Medical Society

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No. 7

### THE AMERICAN MEDICAL ASSOCIATION\*

WALTER L. BIERRING, M.D., President  
Des Moines, Iowa

It is difficult to express in words the personal appreciation of the privilege that this occasion offers—to speak in the city of one's birth, to friends and colleagues of a life time, on behalf of the American Medical Association, in which you by your interest and gracious support did so much to elevate a fellow Iowan to this high station. Speaking to Iowa physicians I am tempted to draw a corollary between the development of our own state medical society and that of the American Medical Association, there being but a difference of four years in their ages.

At the first meeting of the American Medical Association in Philadelphia in 1847, there was present one of Iowa's pioneer physicians, Dr. John T. Sanford, and he returned from this historic session with an enthusiasm for the benefits of organized medicine that resulted in the founding of the Iowa State Medical Society at Burlington in 1851. When viewed in the light of that early period of western civilization, it was a remarkable achievement—to plant the seed of medical society fellowship in this prairie state, far from the influence of the older culture of the east, and even beyond the end of the railroad trail. Likewise, as the primary interest of the American Medical Association was the advancement of medical education and higher standards of practice, so evidently were the early leaders of our society imbued with the same ideals, for here in Davenport in 1849, and one year later in Keokuk, medical schools had their beginning in the Upper Mississippi Valley. Dr. Sanford was also the editor of the first medical journal (1850) published west of the Mississippi river. From those early days to the present time, the Iowa State Medical Society has been a loyal and faithful handmaiden of the parent association in fostering the higher

ideals of medical learning and the practice of the art.

The American Medical Association represents a unity of organization that is unique, and above all democratic, in which the county medical society constitutes the unit of membership. With its 100,000 members it has grown into the largest medical organization in the world, and is distinctly representative, being open to all reputable physicians, each individual member having an equal interest in its welfare. Through its central administration with its various councils, bureaus, committees, a reference library, a great weekly journal, nine specialty journals, and numerous publications, the association further exercises its particular function in making available for the general practitioner and the specialist, every phase of medical progress so essential for the continuing development of the experienced physician. The life of the association is closely allied with the advancement of American medicine, and critical periods such as we are now experiencing stand out as epochal events in its historic development. The reorganization in 1901 on its present form of government definitely influenced its stability and future progress.

With the turn of the century a new era began to dawn in American medicine. The remarkable contributions of the labors of Pasteur, with a new conception of the causation of infectious diseases, of wound infection, the development of anti and aseptic surgery by Lister and Billroth, not only furnished new ammunition for fighting the future plagues of mankind, but brought forth a revolution in the methods of medical education and the extension of medical service into many new fields.

The leaders in our association recognized the need of a complete transformation in the training of physicians in this country, and this need was crystalized in the establishment of the Council on Medical Education in 1904. This was the first step in meeting the educational challenge of this critical period and it will ever be to the eternal

\* Presented before the Eighty-fourth Annual Session, Iowa State Medical Society, Davenport, May 8, 9, 10, 1935.

credit of the organized medical profession that it had the courage to put its own house in order. The high station that medical education has attained in America is the outcome of more than a quarter of a century of careful study and co-ordinated efforts by a number of agencies in which the American Medical Association has always taken a leading part. This evolution in the training of the doctor has brought in its train many of the problems that concern the medical economist of today. The impact of the laboratory, the development of the teaching hospital with the consequent enlargement of physical equipment of medical schools, the lengthening of courses of study, the growth of specialism and the extension of laboratory procedures with the manifold technical and diagnostic aids necessary for modern medical practice, all bear a significant relation to existing medical economic conditions. The production of more doctors than society can properly reward, a gradual recession of the frontiers of civilization, the approaching balance of birth and death statistics in connection with a rapidly expanding age of technology and industry, are further factors influencing the economic state of the medical practitioner and specialist of today.

Our association representing the organized profession of this country has recognized that the doctor is again at the cross roads and has responded nobly to the call for leadership to meet the challenge of a new social order. By enlisting the cooperation of state and county societies, in promoting thoughtful consideration of existing economic conditions and their relation to the delivery of medical service, local communities are meeting their responsibilities better than ever before. A comparison between the sound thinking and grasp of the situation today by medical men everywhere with that of but a short year ago, is the best criterion of the effectiveness of the wide distribution of information from the Bureau of Medical Economics and the many other avenues of publicity that have been available through our association. To sense better the problems of the practitioners in different sections of the country, it has been my privilege by means of personal visits, to gain a closer insight of existing conditions prevailing in various localities. The visits to about forty states, a number more than once, have left some interesting impressions, and at best have been a most liberal education. It was particularly significant to note the scientific spirit that prevails everywhere, often in spite of most trying economic conditions. A complete itinerary would extend beyond the time limit, but a reference here and there may be of interest.

The mid-central states bordering on the Great

Lakes, Ohio, Indiana, Illinois, Michigan and Wisconsin, have economic problems much in common. The hazards of industry, as well as the effect of the depression period upon industrial activities, has had a definite influence upon medical practice and the fortunes of the practitioner. All five states have medical schools of high rank that stimulate graduate courses for practitioners. Indiana has a fortunate cooperative arrangement between the State Medical Society, the University of Indiana Medical School, and the State Department of Health, that distinctly promotes public health activities and preventive medicine which is definitely for the better interests of the practitioner. A similar arrangement prevails in Michigan, where two foundations, the Couzens, and that of the W. K. Kellogg Company, particularly the latter, have greatly extended the services of the practitioner as a member of the county medical society, into new avenues of public health work. Whatever personal opinion one may entertain regarding subsidies granted by philanthropic agencies, the efforts of the Kellogg Foundation in establishing full-time county health units, the provision for preventive immunization work, the care of the indigent sick by the members of the county medical society with adequate compensation, and finally a two weeks post-graduate course in Chicago with all expenses paid, certainly have been to the interest of the progressive physician as well as the welfare of the public. The so-called Wayne county plan for furnishing adequate medical care to those individuals in the lower income groups, including hospital facilities, is a distinct contribution and will serve as a model for other communities.

To attend an annual meeting of the Minnesota State Medical Society is an inspiration, and when it is held during the scorching Iowa days of last July, in the delightfully cool surroundings of Duluth, your regard for Minnesota medicine is increased many fold. The comprehensive scientific exhibit, the excellence of the program, and the intelligent discussion of economic problems, distinguished it from gatherings of similar nature.

The impression that remains particularly of the annual meeting of the Nebraska State Medical Society is the presidential address. I doubt whether a clearer analysis of the medical practitioner's relation to the new economic order was ever presented than that contained in the address of the president, especially remarkable because his entire professional life had been devoted to practice in a rural community.

If you would grasp the spirit that dominates our colleagues of North Dakota you should attend an annual meeting of the State Society at Fargo.



when the temperature is 100 degrees in the shade, the dust-laden atmosphere making visibility uncertain, and a real rain almost unknown, yet withal a smile on every face, and a hearty handclasp for the visiting stranger. The scientific and clinical program would do credit to any large metropolitan center, distinguished by an attendance of sixty-five per cent of the society membership, while meeting in a city on the extreme eastern border of the state. North Dakota is noted for its high medical education and educational and licensure requirements. Its State Board of Medical Examiners required two years of premedical college work and an interne year long before many of the western states. The influence of the University of Minnesota and the Mayo Foundation and Clinic has left its impress on the North Dakota profession, but the invasion of the graduates from leading Canadian medical schools is likewise evident. The delightful Scotch burr on the tongue, and the inimitable Scotch story and song add joy to every medical gathering in this northern prairie state.

Nature has been kind to Colorado, particularly in scenery and atmosphere, and perhaps for this reason Colorado physicians have been able to add greatly to our knowledge and treatment of tuberculosis. A visit to its state medical society is convincing proof that the scientific spirit has been extended into many other fields. That a program devoted entirely to endocrinology on the last afternoon of the session, enlisted the interest of a full attendance, indicates a well coordinated program presented by remarkably attractive speakers. It was my privilege to see in Denver a private library of the works and first edition of Laënnec that has few, if any, equals.

A visit to Salt Lake City and a day spent among Utah physicians leaves the impression that they have inherited some of that driving spirit of these hardy pioneers who made a desert bloom like a garden. The environment of beauty, culture and education has likewise influenced the higher ideals of scientific medicine. Graduates from eastern medical schools have nurtured the highest standards of medical practice, which are now being extended everywhere. The restrictions and supervision of a more or less common faith have permitted comprehensive studies on the prevalence of goiter due to the low iodine content of the native salt and water, of tuberculosis, and again the influence of restricted diet and hygienic living has had its effect on the lowered incidence of diabetes, arteriosclerosis, chronic degenerative heart disease, renal disorders and arthritis.

The medical world of the Pacific Coast presents a domain in itself, particularly California, where

cultism is in its glory. Living on the edge of the last frontier, touched by the flavor of the Far East and the Orient, has perhaps stimulated the emotional element that worships every "ism" that promises relief from human distress, physical, mental and economic. Yet, through it all medicine has nevertheless preserved its best traditions. No where is there a rarer collection of precious medical books than in the Lane Library in San Francisco, or a more beautiful and complete medical home than that of the Los Angeles County Medical Association. Recent events would indicate that certain medical leaders in California are deluded by the attractions of compulsory health insurance, but the successful development of plans in Alameda and San Diego counties for the adequate medical care of all its people under complete medical supervision, must soon dispel these mirages of hope offered by a new philosophy, and better judgment will prevail.

Portland is famous for its roses and Oregon as a state has many attractions, but its medical profession has maintained the highest precepts of American medicine at all times. The State Society meeting at Corvallis, about eighty-five miles from Portland up to Willamette Valley, with its fine program, unusual scientific exhibit, and professional fellowship, will always be a happy reminder of the leadership and progressive type of doctor that forms the profession of the northwest. The medical profession of Washington state has been known to take certain radical ventures into the field of medical economics, yet its state society was among the first to endorse the action of the recent special session of the House of Delegates of the American Medical Association.

We are inclined to regard the medical profession of Arkansas, Oklahoma, or even of Kansas, as on the borderland, yet a visit to any of the large medical gatherings will present many surprises. When annual postgraduate clinical assemblies attract an attendance of eight hundred at Oklahoma City, one thousand one hundred at Kansas City, and seven hundred at Omaha, it indicates that the physicians of the southwest are eager for new knowledge in medicine, and are showing the true spirit of continued study.

Reference has been made to the oversupply of medical graduates to meet the needs of the present period, and any survey of southern medical schools would seem to support this view. One can begin at Louisville, Kentucky, the seat of a University Medical School, then to Nashville, two hundred miles to the south where two schools are located, Vanderbilt and Meharry (colored), then another two hundred miles to the west in the same state to Memphis, the site of the medical school of the

University of Tennessee, across the Mississippi river into Arkansas to Little Rock, where the medical school at the State University is located, and finally across the Arkansas river into Oklahoma, where we find the State University Medical School at Oklahoma City. A short distance to the south into Texas at Dallas and Galveston, are located the Baylor University and State University Medical Schools. Two schools in New Orleans, Tulane and Louisiana University, a two year medical school in Mississippi and another in Alabama; in Georgia are two medical schools, the State University at Augusta and Emory University at Atlanta; one at Charleston, South Carolina, Duke University and two two-year medical schools in North Carolina, finally two medical schools in Virginia and one in West Virginia, make a rather full list for the region south of the Mason and Dixon line. It would seem as if some curtailment or merging process would be helpful and distinctly to the interest of medical practice in this section of our country.

The colleagues of the great states of New York and Pennsylvania, as well as on the Atlantic seaboard, seem to have felt more keenly these recent years of economic depression. A few states about New York represent a population of more than thirty-two million, a fourth of the country's inhabitants; all are dependent in a large measure upon industry and commerce, yet in spite of economic distress, medicine has still advanced as before. They trace their age back into the years, for I attended last week at Atlantic City the one-hundred-sixty-ninth annual session of the New Jersey Society, and next week expect to attend the one-hundred-twenty-ninth session of the State of New York in Albany, and the one-hundred-forty-third annual meeting of the Connecticut State Medical Society at New Haven. In Brooklyn and New York City, a society of socialized medicine has been organized of rather large membership which constitutes a menace to any proper solution of medical economic problems.

It was a privilege during January and February to learn something of society organization and medical conditions in the southeastern states. Here also the doctor has felt the pressure of these trying years, yet Florida with its shoreline of 1500 miles, contains a profession that showed a vital interest by attending in large numbers a mid-winter meeting of the state society at Orlando. They are encouraged by the prospect of a larger citrus and possibly a new tourist crop, that is having its effect. Here as elsewhere a bit of the oldtime prosperity will help to clear the economic atmosphere. It was a rare treat to meet the fine medical gentlemen that form the profession of Georgia in Atlanta.

The historical atmosphere of beautiful old Charleston thrills the visitor from the north. The minutes of the Society of South Carolina are still kept in pen and ink, beginning with the first session, held on September 3, 1787, and familiar names on the first roll—Ravenel, Wilson, Johnson, Waring, Moultrie, are represented in descendants who are likewise the leaders in Carolina medicine today. The medical library contains many treasures coming down from early Huguenot days.

Duke University with its medical school at Durham, North Carolina, represents a university built, from the ground up, of stone quarried from its own land, in the architecture of old Oxford, and is a real accomplishment. With the city of Durham destined to become a great industrial center, this well equipped medical school and hospital will exert a profound influence on the advancement of medical practice in this entire region.

Virginia with a medical history extending back to the days of Captain John Smith and the settlement of Jamestown, exemplifies in its medical men of today that devotion to the higher precepts of medical practice which has carried them through many trials in the past. The Academy of Medicine of Richmond, with its modern marble building containing the magnificent Joseph L. Miller Medical Library, indicates the spirit of these doctors of the old dominion and assures the maintenance of American medical ideals, both ethical and educational.

These various contacts with the medical practitioner at medical society meetings were interspersed with attendance at different educational conferences—Minneapolis and Nashville, special medical gatherings at Philadelphia and New York City, the annual session of the American Public Health Association at Pasadena, California, and the American Bar Association at Milwaukee. A happy privilege was the attendance at the citation ceremony of the American Legion for distinguished services to humanity by William J. Mayo and Charles H. Mayo, honored by the presence of the President of the United States. It was a distinct recognition of the achievements of American medicine, for the name of Mayo has become a symbol of all that is fine and noble in the American doctor, in extending his beneficent influence to the peoples of all the world. There was the further privilege of attending the conferences in Washington, of the Medical Advisory Board of the President's Committee on Economic Security. The contacts were interesting and while the outcome may not have seemed entirely satisfying, yet the fact that federal legislation on health insurance has been deferred was an accomplishment and made the efforts worthwhile.



It has been a year of trial for medical men everywhere, yet there is light ahead. Thoughtful men and women are becoming convinced that private practice will continue to promise the best service for all concerned, and assure the quality of the same. The duty of the present is to control legislative action and permit the demonstration of local community plans under medical control. It is gratifying to note the large and important part the Iowa State Medical Society has had in solving the problems of the hour. In federal conferences and large medical society discussions, the Iowa plan for the care of indigent is frequently cited for reference. At the Annual Congress on Medical Education, Licensure and Hospitals, held in Chicago last February, the Chairman of your Speakers Bureau was given a leading place on the program, to explain the graduate extension courses fostered by the state society. At the annual meeting of the Arkansas State Society held in Fort Smith a few weeks ago, a Speakers Bureau was established, and the Iowa plan is to be used as a model. More recently the Iowa plan for medical emergency relief so efficiently directed by Dr. Denny and endorsed by the Iowa State Medical Society is referred to as one of the most satisfactory methods operating in the country at this time.

All the energies and facilities of the American Medical Association are constantly at the service of its constituent societies and individual membership. The American Medical Association conceives its function to be a guide, a counselor, and to point the way. The tide has been stemmed for any radical ventures, but constant vigilance is necessary and there must be no weakening of the faith. No one can view the situation as a whole and not have the fullest confidence that the enlightened doctor of today will adapt himself to the demands of modern society and still maintain that idealism of medical service which forms the treasured traditions of our profession. Furthermore, may we express the fervent hope that Iowa will continue to "catch the gleam and follow it," for the good of medicine and the welfare of man.

#### THE RELATIONSHIP OF ARTERIAL HYPOTENSION TO SURGICAL RISK\*

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The systolic blood pressure of three per cent of normal adult subjects is 110 mm. of mercury, or less. Huber analyzed the weights and blood pres-

ures of 1,332 healthy men and found that of those with hypotension, 53 per cent were underweight and only six per cent were overweight. Larimore, in a study of 417 factory workers, stated that those with low blood pressures were usually of asthenic or hypasthenic build. Fischer studied the life expectancy of 3,589 persons between the ages of sixteen and sixty years, whose systolic blood pressures were 100 mm. of mercury or less. He found that the expected mortality rate was 35 per cent of that found in the standard American tables. Muhlenberg stated: "A low blood pressure after fifty, without any obvious cause, is the best criterion we possess that an individual will live beyond his normal expectancy."

Little information is available regarding the relationship of hypotension to surgical risk. Adams stated that patients with a very slow pulse rate and correspondingly low blood pressure withstand shock much better than patients with extremely high blood pressure, provided the pulse pressure is fairly high. Moots, in 1916, developed the term "index of operability," which is arrived at by the calculation: pulse pressure over diastolic pressure. An index of 0.5 was considered ideal. If the index of operability was between 0.3 and 0.7 he said, "the case was probably operable," but if the index was "below 0.25 or above 0.75 the case was probably inoperable." Carstens, discussing Moots' paper, stated: "If you have a patient with a blood pressure of 170 or 200, it is dangerous to operate. The same holds true with a patient who has an abnormally low blood pressure." Huggins stated: "Patients with either extremely high or low blood pressures may be very poor risks."

#### BASIS OF STUDY

In this study I have analyzed the records of 250 patients seen at The Mayo Clinic whose systolic blood pressures on admission were 100 mm. of mercury or less and who were subsequently subjected to major surgical operations. In thirty-six cases in the group the systolic blood pressure was 90 mm. of mercury or less. The group comprised 100 patients who had undergone cholecystectomy, fifty who had undergone major pelvic operations, and 100 who had been operated upon for lesions of the stomach or duodenum. Patients with jaundice, diabetes, or syphilis were eliminated from the study because it was felt that these factors might play a part in the mortality rate. Patients with Addison's disease, or those with pigmentation suggestive of Addison's disease, were not included because it is well known that patients with Addison's disease are remarkably poor surgical risks. The group is necessarily somewhat small because of the basis of selection of cases which has just been given.

\* Abridgement of thesis submitted to the faculty of the graduate school of the University of Minnesota in partial fulfillment of the requirements for the degree of Master of Science in Medicine.

† Now residing in Cedar Rapids, Iowa.

There were eleven females and eighty-nine males in the group of 100 patients who had undergone operations on the stomach or duodenum. The preponderance of males is due in part to the fact that ulcer and carcinoma occur more frequently among men. The group of patients on whom cholecystectomy had been performed was composed of sixty-five females and thirty-five males, an incidence by sex comparable to that noted by Allen in a report of about 14,000 cases of cholelithiasis. The remaining fifty patients were all females; the group consisted only of those who underwent major gynecologic operations.

The distribution of these 250 patients according to decade of life was as follows: two were in the second decade, thirty-five were in the third, seventy-seven in the fourth, seventy-seven in the fifth, forty-one in the sixth, seventeen in the seventh, and one patient was in the eighth. Eighteen of the patients were sixty years of age or more. The weight and height of the patients may be noted in Table I. Those studied were

TABLE I  
Weight and Height of Patients Studied

Weight		
Pounds	Kg.	Cases
50 to 59	22.7 to 26.8	1
60 to 69	27.2 to 30.9	2
70 to 79	31.8 to 35.8	9
80 to 89	36.3 to 40.4	15
90 to 99	40.8 to 44.9	36
100 to 109	45.4 to 49.4	37
110 to 119	49.9 to 54.0	42
120 to 129	54.4 to 58.5	26
130 to 139	59.0 to 63.0	25
140 to 149	63.5 to 67.6	18
150 to 159	68.0 to 72.1	8
160 to 169	72.6 to 76.7	8
170 to 179	77.1 to 81.3	5
180 to 189	81.6 to 85.7	1
190 to 199	86.2 to 90.3	
200 to 209	90.7 to 94.8	

Height		
Inches	Cm.	Cases
50	127.0	1
58	147.3	2
59	150.0	1
60	152.4	5
61	155.0	11
62	157.5	15
63	160.0	11
64	162.6	17
65	165.1	13
66	167.6	21
67	170.2	24
68	172.7	24
69	175.3	14
70	177.8	9
71	180.3	9
72	182.9	4
73	185.4	3
74	188.0	2

chiefly of medium height and appeared to be below normal in weight.

The pulse pressures of 229 patients were between 20 and 45 mm. of mercury, eighty-two of these having pulse pressures between 30 and 35 mm. Moots' index of operability was calculated in all of the cases (Table II). The index varied

TABLE II  
Moots' Index as Applied to Cases Studied

Moots' Index	Patients	Moots' Index	Patients
0.1	6	0.75	1
0.2	3	0.8	7
0.25	27	0.9	0
0.3	48	1.0	3
0.4	63	1.1	2
0.5	47	1.2	3
0.6	35	2.39	1
0.7	4		

from 0.14 to 2.39, and twenty-five patients fell within the range that Moots considered "probably inoperable," that is, less than 0.25 or more than 0.75.

The pulse rates were found to vary from 57 to 105, with the greatest number of patients (186), having a pulse rate of from 70 to 89 beats per minute. The concentration of hemoglobin in the blood (Dare) varied from 27 to 110 per cent, with the greatest number of patients (123) having a concentration of from 70 to 79 per cent. Bleeding from gastric and pelvic lesions doubtless contributed to the number of cases in which the value for hemoglobin was below normal. The number of erythrocytes per cubic millimeter of blood varied between 2,160,000 and 5,370,000 and among the greatest number of patients (148) it was between 4,000,000 and 4,990,000. The subnormality of concentrations of hemoglobin in the blood, and the lowering of the blood counts, were not of sufficient degree to be factors in the genesis of the hypotension.

Ophthalmoscopic examination of the retina was made in only forty-three cases; in all of these except one the examination gave negative results and in that one old, chronic retinitis was revealed. Electrocardiographic examination of the heart in the only two cases of the series in which it was carried out gave normal results.

Determination of renal function was made by determining the excretion of phenolsulphonphthalein and the concentration of urea in the blood; the former test gave negative results in sixteen cases (more than 40 per cent) and gave evidence that renal function was subnormal in three, although the amount of urea per 100 c.c. of blood in these three cases was normal. The concentration



of urea was normal, that is, less than 40 mg. per 100 c.c. of blood, in fifty-eight cases, and only slightly above normal in two cases; in one of the two cases the value for urea was 42 mg. and in the other, 52 mg. per 100 c.c. of blood; in one of the two cases the output of phenolsulphonphthalein gave evidence that renal function was normal.

Urinalysis was made in all cases. If albumin was of grade 1, if erythrocytes were present in the noncatheterized specimens of urine of patients with vaginal bleeding, and if pus cells numbered less than 20 per high power field the specimen was considered normal. According to these standards, urinalysis gave negative results in 242 cases; in five cases albumin was graded 2. Hyaline casts graded 1, and occasional erythrocytes, were noted in two cases, but in both of these the concentration of urea in the blood or the excretion of phenolsulphonphthalein was normal. Twenty-five leukocytes per high power field were present in an uncatheterized specimen of urine in another case.

Illustrative of the apparent fitness of these patients is the fact that few functional tests other than those mentioned were deemed necessary.

OPERATIVE MORTALITY

Four patients of the entire group of 250 died as a result of operation, that is, while they still were in the hospital, a mortality rate of 1.6 per cent. This mortality rate does not exceed that for similar surgical procedures for an unselected group of patients. Three of the patients who died had blood pressures between 91 and 100 mm. of mercury, and only one had a blood pressure of 90 mm. or less. One patient died as a result of cholecystectomy, an incidence of one per cent, which is less than the figure (1.7 per cent) reported by Judd and Walters for this type of operation. Three patients died following operations on the stomach and duodenum, an incidence of three per cent. This figure is almost identical with the 3.1 per cent reported by Balfour in 1930, as an operative mortality rate in 860 cases of major operations on the stomach. There were no fatalities among the fifty patients who had undergone major pelvic operations, as contrasted with an operative mortality rate of 2.3 per cent in 413 cases in which hysterectomy was performed in 1931 and reported by Masson. The small number of patients with hypotension who underwent major operations on the pelvic organs, however, must be considered.

Two of the four patients who died were reported to have had peritonitis and terminal bronchopneumonia. If these cases are eliminated on grounds that the deaths were not related to any failure of the cardiovascular-renal system, and I do not believe their deaths can be attributed to this, there

remain but the other two in which death was reported as having been caused by pneumonia alone; in those, failure of the cardiovascular-renal system may or may not have been a factor. This is an incidence of 0.8 per cent in 250 cases.

The low mortality rate for this group of hypotensive patients I believe can be related in a degree to the absence of apparent injury to the cardiovascular-renal system, as illustrated by the outstanding majority of normal reports for all functional tests. The fact that all four of the patients who died were elderly, that is, fifty-six, sixty, sixty-four, and seventy-six years of age, respectively, I believe is significant and is suggestive that the elderly patient with hypotension represents the greatest surgical risk in the group of cases of hypotension.

Of the twenty-five patients deemed probably inoperable, according to the calculated Moots' index, only one died, and this patient had an index of 1.0. The other patients who died had indexes in the "operable" range, namely, 0.43, 0.41 and 0.47, respectively. It is obvious from this that Moots' index is not applicable to patients whose blood pressures are less than normal.

Data regarding 174 patients who were available for variable periods of time after their dismissal from the clinic are given in Table III.

TABLE III  
Follow-up Data on 174 Patients

After dismissal, years. . . . .	1	2	3	4	5	6	7	8	9	10	13	15
Patients living and well . . . . .	37	40	24	26	9	4	1	2	5	1	1	2
Patients dead . . . . .	12*	6**		1***								

\* Ten died of extension of a carcinomatous process.  
One died of "angina pectoris" and pneumonia.  
One died in an accident.  
\*\* Five died from extension of a carcinomatous process.  
One died from bronchopneumonia and anuria following operation elsewhere.  
\*\*\* Died from extension of the malignant process found at necropsy.

CONCLUSIONS

1. Patients in the age group studied with essential arterial hypotension not associated with jaundice, diabetes, or syphilis tolerate surgery as well as, or better than, patients from an unselected group who undergo similar surgical procedures. This appears to be due, at least in part, to the absence of pathologic conditions involving the heart, blood vessels, and kidneys in this group of patients. Patients with hypotension have a tendency toward longevity that is expressed by their excellent resistance to the usually serious complications following major surgical procedures.
2. Moots' index of operability does not apply to patients with hypotension.
3. The elderly patient with hypotension appears to carry the greatest surgical risk in the group studied.

ASPIRATION TREATMENT OF EMPY-  
EMA IN CHILDREN\*

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The efficacy of the different methods which have been suggested for the treatment of empyema both in adults and in children has been the subject of controversy over a long period of years. It has been recognized that the more radical surgical procedure is borne very badly by young children. Moreover, the mortality rate in different series which include both adults and children has ranged all the way from 30 to 70 per cent. Even the surgeons have long since been convinced that open drainage is especially contraindicated in the early stages of streptococcic empyemas in any age group. For this reason preliminary aspiration has always been employed for the relief of intrathoracic pressure, preceding more radical surgical intervention.

Prior to the World War, surgical operations on the thorax, with a few notable exceptions, were confined to resection of ribs, artificial pneumothorax, or the occasional successful suture of the heart muscle following a knife wound. The great chest injuries and the wide prevalence of empyema following the pneumonias incidental to the war, however, made it possible and desirable to perfect means by which these conditions could be more satisfactorily met. In cooperation with the medical men, the surgeons, although already overburdened with many new problems, responded to the situation. Rapid and brilliant were the achievements in this field. The thorax, which was the last and only part of the human body which the surgeon had been reluctant to invade, has become almost as accessible to him as the abdomen. From the war, then, thoracic surgery, the latest great division of general surgery, came into existence. Until this time the greatest obstacle to the development of thoracic surgery was believed to be the disturbance to the vital functions of respiration and circulation produced when the normal pleura was opened. The elementary physiologic fact that respiration is based on the so-called negative intrapleural tension had always been a deterring factor against any extensive opening of the pleural cavity, because of the fear that if the pressure were equalized inside and outside of the lung, respiration would cease. However, during the war patients were observed with wide openings in the pleural cavity caused by trauma or drastic operations for the relief of the virulent empyemas that prevailed, without untoward effects. These observations demonstrated that the chest cavity could be more widely opened and explored without the special differential pres-

sure appliances for the maintenance of respiration that were formerly thought to be necessary.

I am indebted to my confrère, Dr. Danna, of New Orleans, who has been a pioneer and consistent advocate of aspiration and air replacement in the treatment of empyema, for the information that as early as 1890, Forlanini reported six cases of empyema treated in the previous two years by this closed method. Forlanini cited a controversy at the medical congress in Vienna, in 1889, between the advocates of wide open incision and drainage, and the partisans of what he called the Bulau method as practiced today.

While serving with an American base hospital on the Italian front, during the World War, Danna frequently visited a hospital which was located near by, under the direction of Morelli, a pupil of Forlanini. His observations there acquainted him with the removal of nonpurulent effusions by the method so long advocated by Forlanini. He was impressed with the fact that if attempts are made to empty the chest accumulation by simple aspiration with no air replacement, it is necessary eventually to stop without removing all the fluid, for one of two reasons: either the negative pressure becomes so great as to cause pain and respiratory or cardiac embarrassment, or the needle will come in contact with the visceral pleura and cause pain, coughing, dyspnea, and shock. If, instead, the fluid is gradually replaced with air as it is removed, the cavity maintains its original size and shape, and every drop of the fluid can be removed with practically no discomfort.

Dr. Danna did not use the method in the treatment of empyema until 1923, when he had occasion to perform a temporary aspiration on a young woman with an empyema complicating an influenzal pneumonia. Having found pus by exploratory puncture, he decided, while the needle was still in place, to remove as much of it as possible, previous experience with aspiration with air replacement of nonpurulent effusions encouraging him in the belief that this could be done without harm or discomfort to her. Therefore, he proceeded, easily removing 300 c.c. of pus, and replacing it with an equal volume of air. The patient improved remarkably immediately after this, and when a few days later thoracotomy was considered, she suggested another aspiration, which was done, and the fluid replaced with air. Finally, the same thing was done a third time, following which the patient became clinically well, and has been well ever since. Since then, Dr. Danna<sup>1</sup> has been one of the chief advocates of aspiration and air replacement in the treatment of empyema among the surgeons, and his suggestion that this method should at least be tried before resorting to more radical procedures, has

\* Presented before the Linn County Medical Society, November 30, 1934.



appealed particularly to those who have to deal with this condition in children.

Among the pediatricians, Dr. Brennemann, of Chicago, has been the leader in the utilization of this method of treatment. In about 1927 and 1928, with his associate Dr. McEnery, Dr. Brennemann encountered several patients so critically ill that their surgical consultants did not think it safe to operate. They resorted to simple aspiration of the pus from the pleural cavity, and their results were so satisfactory that they were encouraged to continue this method of treatment. They were fully cognizant of the yearly and seasonal vagaries of infection, and were therefore interested in seeing whether their experience of one year represented a norm or was the result of a peculiarly favorable year. They reported the first series of their patients in 1929<sup>1</sup>, and in 1932<sup>2</sup>, reported their experience in a total series of 94 cases of children treated by aspiration. In their second paper, they reported that their procedure was quite the same as they had used in previous years, but that they resorted to surgical treatment more quickly whenever this seemed to offer a safer course, either because of some complication, such as nephritis, or because recovery by aspiration alone seemed uncertain or unduly delayed. In this paper they reported 94 consecutive cases of empyema in children treated by aspiration, 68 or 72 per cent of whom were cured without operation. Thirteen were operated upon after a period of aspiration, with one death due to tuberculous meningitis. The mortality rate was 12.8 per cent.

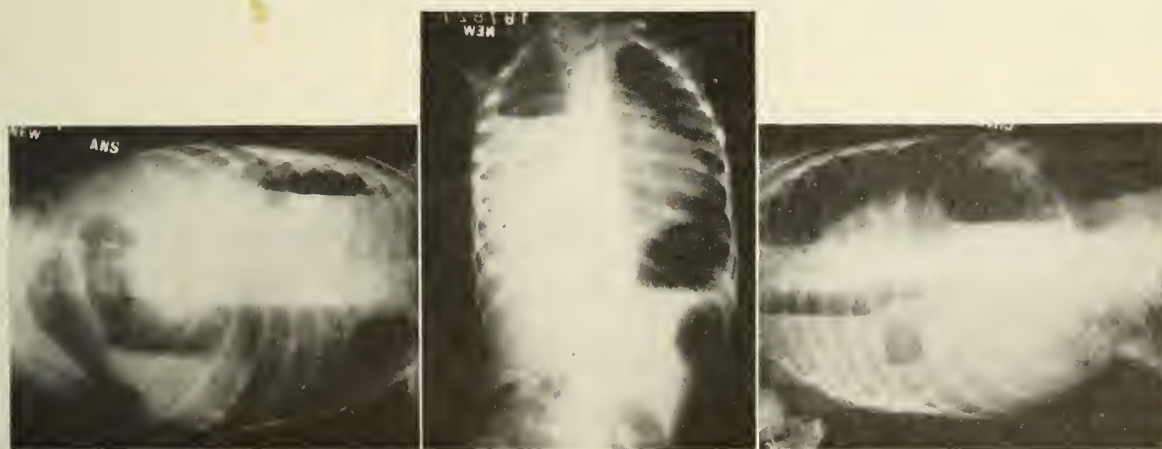
In 1931, Danna<sup>3</sup> reported the cases of thirty-five patients so treated, with only two deaths (5.7 per cent). There were, however, no children under three years, and six from three to twelve years of age. The rest of the patients were from fourteen to seventy-five years of age. Danna attached great importance to the replacing of the pus withdrawn

with a like amount of air. My friends, Ochsner and Gage<sup>4</sup>, from the Department of Surgery, Tulane University, reported 79.2 per cent recoveries in twenty-six patients, all over eleven years of age, by aspiration and air replacement alone, with a mortality rate of 10.3 per cent. Their mortality rate with simple intercostal drainage was 12.2 per cent, and with rib resection 13.2 per cent. In 1930 and 1931, sixty patients were treated in the Pediatric Department of Tulane University, in New Orleans, with a mortality rate of 13.3 per cent.

#### TECHNIC

The method has attracted wide attention among medical men, and it is believed that the following procedure, which is used by those employing the method, is worthwhile. It is probably not necessary to invite attention to the fact that a most careful examination should first be made and the findings checked with roentgenograms to determine the exact level of the purulent effusion. In taking the picture, it is important that the child should be held in an upright position. We have found it convenient for one of us to hold the child in our lap facing the tube, with the film holder between the child's back and our chest. In Figure 1, the importance of this upright position is illustrated. Having determined the pus level, the roentgenogram should be placed in a view box conveniently situated so that it can be referred to as a guide in selecting the point of puncture. This point should be selected in the intercostal space corresponding to the lower point of the empyema cavity. It is anesthetized with 0.5 per cent solution of procaine hydrochloride, infiltrating all the tissues from the skin to the pleura inclusive. A large needle is then attached by a stiff rubber tube connection to a 50 c.c. Luer syringe and inserted at this point. A syringeful of pus is aspirated, the tube is

FIGURE 1



B:—Pus level when lying on right side.

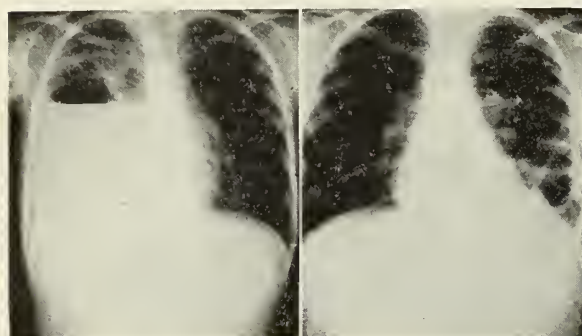
A:—Pus level in upright position.

C:—Pus level when lying on left side.

clamped with hemostatic forceps, the syringe is disconnected, emptied, filled with an equal quantity of air, and reconnected to the tube and needle, the forceps are unclamped, and the contained air is injected. More recently we have been disposed to discontinue air replacement after about 300 to 400 c.c. of pus are withdrawn, and we are less disposed to aspirate until nothing but air comes out of the pleural cavity since Brennemann invited attention to the fact that he was certain a fairly large amount of pus could safely be left for absorption. We soon became convinced of this fact also, and one particular case, illustrated in Figure 2 resulted in complete recovery after a single partial aspiration. We think that this substantiates Brennemann's opinion, which has likewise become our own, that a certain number of patients with limited empyema may recover without any treatment at all.

In none of our cases have we resorted to irrigation of the cavity with any of the chlorine solutions usually recommended, nor have we instilled any optochin base (ethylhydrocupreine) as has been done in France and Germany.<sup>5, 6, 7 and 8</sup> It will be recalled that this substance is known to be destructive to pneumococci *in vitro*, and theoretically it should be effective against this organism in an empyema cavity. Brennemann reviewed this work in his first paper, and we have followed his leader-

FIGURE 11



A:—Before aspiration.

B:—Recovery after one aspiration. This plate was taken about 72 hours after the one shown in "A."

ship by not using it, and are still of the opinion that our mortality rate could not have been further reduced by employing it.

In the cases which we have observed, we have been convinced that the mortality and success of the treatment has depended largely on the type of organism and on the virulence of the same organism from year to year. In the personal report I made to Dr. Brennemann in a conversation a few years ago, and to which he refers in his second paper, I emphasized the fact that our percentage of eight, as compared to his in Chicago of 12.2

per cent, was in all probability due to the lower virulence of the organism with which we were dealing as compared to that which he happened to encounter in Chicago. The eight per cent referred to in his paper in citing our record was on the basis of thirty-seven children treated at that time. In sixty cases, which is the present figure, our mortality rate has already risen to 13.3 per cent. Moreover, all of our cases have been caused by the pneumococcus, which it is generally agreed is responsible for a lower mortality rate than other organisms. Since then, the organisms which Dr. Brennemann and others have encountered in addition to the pneumococcus, have demonstrated this fact beyond any doubt. Our experience seems to confirm fully the frequently stated impression that empyema due to pneumococcus is the most favorable type in which to use aspiration as the sole method of treatment. In spite of the paradox referred to by Dr. Brennemann, that the pneumococcus is apparently the greatest producer of large masses of fibrin, our experience has paralleled his, in that fibrin has never caused us any inconvenience in aspirating. The fact that we have frequently encountered difficulty in identifying the organism in direct smears because of marked degenerative processes, seems to confirm the frequently expressed opinion that a process of digestion by a proteolytic ferment must take place. We have never found it necessary to increase the size of our needle because of its becoming occluded.

Some idea may be formed of the frequency with which various organisms occur in empyema in Table I, and Table II shows the occurrence of the infecting organisms in the McEney-Brennemann series.

TABLE I

Occurrence of Various Infecting Organisms in 180 Cases of Empyema

Organism	No. Cases	Per Cent
Pneumococcus .....	115	64.0
Streptococcus .....	26	14.4
Staphylococcus .....	14	7.8
B. Influenzae .....	1	0.5
B. Tuberculosis .....	1	0.5
Mixed Infections .....	23	12.8

TABLE II

Occurrence of Infecting Organisms in McEney-Brennemann Series of 94 Cases of Empyema

Organism	No. Cases	Per Cent
Pneumococcus .....	69	71
Staphylococcus .....	9	9.6
Hemolytic Streptococcus ..	7	7.4
Streptococcus Viridans ...	3	3.1
Bacillus Pyocyaneus .....	1	
No Culture Taken .....	5	



The influence of the organism on the mortality rate is illustrated in the analysis of the McEnery-Brennemann series as follows: pneumococcus, 7.5 per cent; streptococcus hemolyticus, 28 per cent; streptococcus viridans, 33.3 per cent; and staphylococcus, 44.4 per cent.

Since the publication of both reports of McEnery and Brennemann, Danna's, Ochsner and Gage's, as well as this series, the question naturally arises as to just what place this method should take in the treatment of empyema as compared to close drainage and open thoracotomy. Certainly these reports are most encouraging, but I want to say most emphatically that I am not offering it as a substitute for either of the other two methods mentioned, and I know that none of the authors whom I have mentioned wishes to give this impression. Certainly, however, aspiration is the method of choice in the early treatment of empyema. In addition we have been encouraged to continue just as others have because of the marked relief that it gave to the children who we realized would not stand the more radical procedures as well as simple aspiration. We, therefore, consider if it does offer relief, and there is no evidence of profound toxemia, that it should be continued as long as the child shows improvement. It is true, as some critics have pointed out, the patients are hospitalized longer than when the more radical procedures are used, and all agree with McEnery and Brennemann that it is the consensus of opinion among pediatricians that young patients should be evacuated from the hospital as soon as possible because of cross infection. Nevertheless, there has been such a marked improvement in the mortality rate, as is shown in the several communications, that I think and strongly recommend aspiration to be tried at least first in the treatment of every empyema which we encounter in children.

I wish to take this opportunity of acknowledging the valuable assistance rendered by Dr. R. R. Roberts, of Lawrenceville, Georgia, and Dr. George W. Kutscher, of Ashville, North Carolina, former associates in our department, in making these observations possible.

#### SUMMARY

1. Sixty cases of empyema in children treated by aspiration alone, with a mortality rate of 13.3 per cent, are reported.
2. The organism and its virulence apparently influence the mortality rate.
3. The lower mortality rate among children with empyema treated by simple aspiration as compared to the other methods of treatment seem to justify its being tried first in every empyema encountered in children.

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## SUPRACONDYLAR FRACTURES OF THE HUMERUS

### A NEW METHOD OF TREATMENT

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The common transverse fracture of the humerus above the condyles is not a particularly difficult one to treat. The area of the cross section of the bone at this point is quite large enough to make proper contact easy to accomplish. The serrations are usually sufficiently coarse to prevent slipping when reduction is complete. Posterior displacement of the distal fragment or fragments is the rule. Under ether, manual manipulation by hyperextension, traction and flexion, accomplishes reduction. The Jones position of acute flexion maintains this. The splinting of this fracture by the triceps tendon, upon which the Jones position depends, produces one of the best fixations in the whole range of fracture treatment.

The ease of correction and maintenance of reduction in fractures in this location disappears under certain conditions. Long spicules may prevent easy and complete reduction. In certain instances the angle of obliquity makes the maintenance of reduction difficult or impossible. Commminution may operate in a similar fashion. Epiphyseal separations present smooth slippery surfaces which may easily become displaced. The fracture, comminuted or uncomminuted, may run transversely or obliquely through the fossae.

Attempts at reducing this last type of fracture commonly fail, due to the fact that the mid-portion of the fracture traverses very thin bone, and the lateral portions are not overly broad. This necessitates exact contact of the lateral pillars, which is difficult to accomplish and when accomplished is often not maintained. The displacement is due to a rotation of the upper fragment upon the distal fragment. The thin bony membrane between the two fossae crushes down, leaving the lateral portions of both fragments like the prongs of a boy's

sling shot. These engage each other by straddling. This situation may be overlooked especially if the x-ray films are poor or the observer unskillful. Persistence in this position results in a blocking of both the coronoid and olecranon fossae. When healing occurs, callous formation completely obliterates these fossae, and motion at the elbow

it is also applicable to fractures with other characteristics.

In the treatment of this fracture, it becomes necessary to maintain the length and control the rotation in order that this straddling may not occur. It is easy to control the rotation of the *lower* fragment because it will turn to any position, following the movements of the forearm. This is not true of the upper fragment which is perfectly free to rotate in the glenoid cavity. Means must then be found to prevent this. Such can easily be done by the introduction of a Kirschner wire

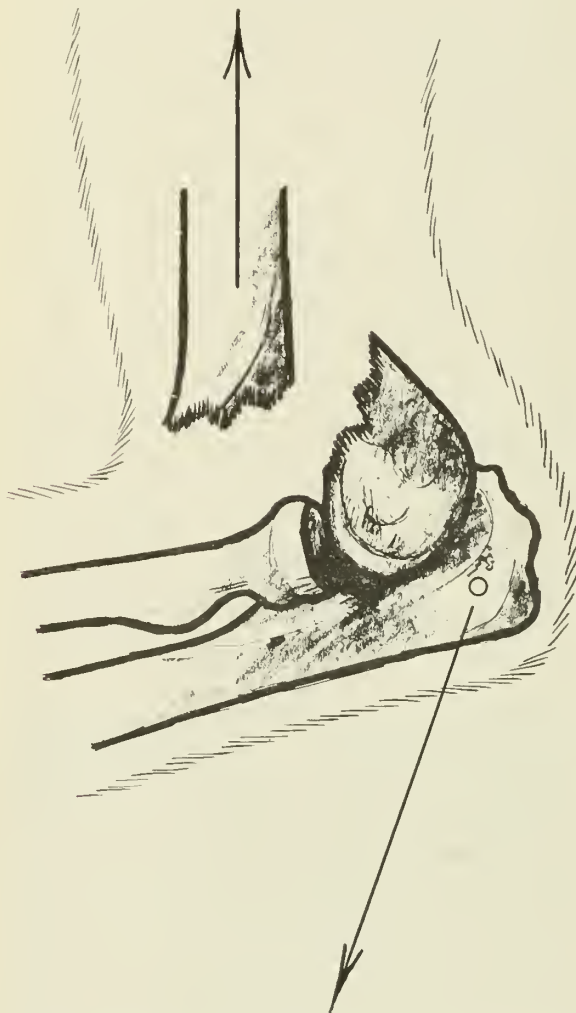


Figure 1. Direction of forces required for reduction of posterior displacement of distal fragment indicated by arrows. Position of upper wire not shown.

joint is restricted almost to the point of complete immobility.

This difficulty has led in the past to frequent resort to open operation with consequent risk of infection and very serious damage to the joint. The use of the Kirschner wire through the olecranon, weight traction, or elastic traction by means of a plaster-of-Paris spica, or fixed traction in the same manner, has frequently been successful. In a certain proportion of cases, control of the rotation of the upper fragment is impossible and satisfactory apposition is not obtained. It is for such a situation that the present method was devised, although

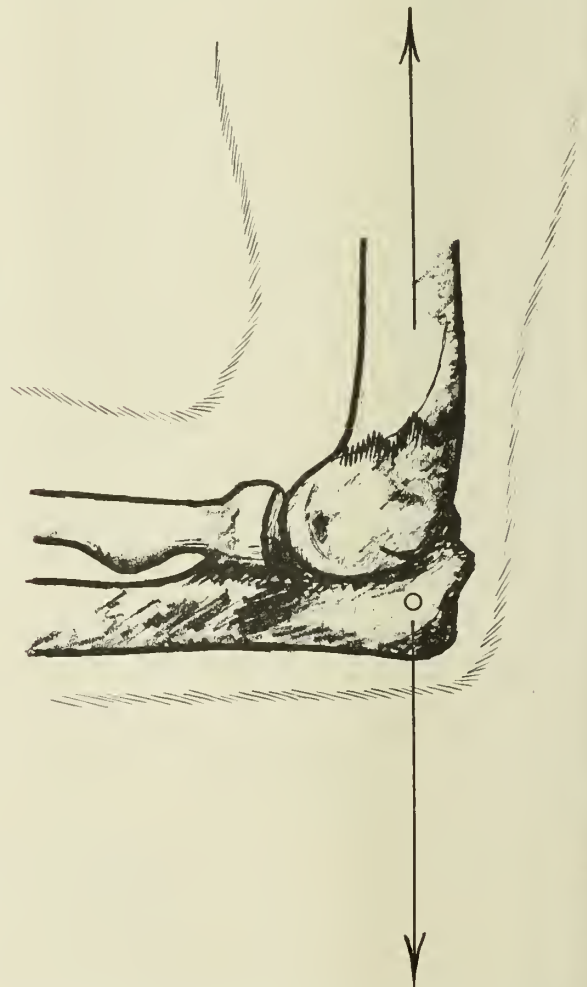


Figure 2. Reduction accomplished. In none of these diagrams has an attempt been made to show the not uncommon rotation with inaccurate replacement.

through the upper fragment. The choice of location for the insertion of this wire through the humerus is not as broad as in the tibia. It is not advisable to insert this wire at any place throughout the length of the bone because of the presence of the three large nerves, the artery and the vein. The wire must be far enough away from these structures to avoid risk of damage to them. Such a location is found in the greater tuberosity. The



wire can be passed into the tuberosity through the deltoid muscle and come out upon the other side with no risk of injuring any structure, except possibly the biceps tendon where it passes through the bicipital groove. This is without risk or if not without risk, the times when I have used this method, the wire has not entered the tendon or groove.

The length can be controlled by a Kirschner wire passing through the olecranon. These two wires can be made to control perfectly both the length and the rotation. In the insertion of the wire through the olecranon process, an incision should be made along the inner border of the olecranon, and the ulnar nerve should be isolated so that the wire may not puncture the nerve in

elbow, the wire tightened, and the tractor secured to the traction arm on that side. Sufficient traction is then exerted to relax the muscles and produce dis-engagement of the fragments. The position of the forearm may be in the ordinary aeroplane position. At this point, it is impossible to determine exactly what rotation is necessary. If proper fluoroscopic equipment is available it may now be used during the manipulations of reduction. A portable x-ray set might be used to check the position before the completion of the cast. I favor neither of these means for reasons not within the scope of this article. Substantial reduction having been accomplished, the plaster-of-Paris spica is completed to the finger-tips and allowed to set. When properly hardened, traction buttons are attached to the lower wire, set in place and the tractor which has carried the strain up to this point is detached. The preliminary procedure is now complete.

The next day the position should be checked

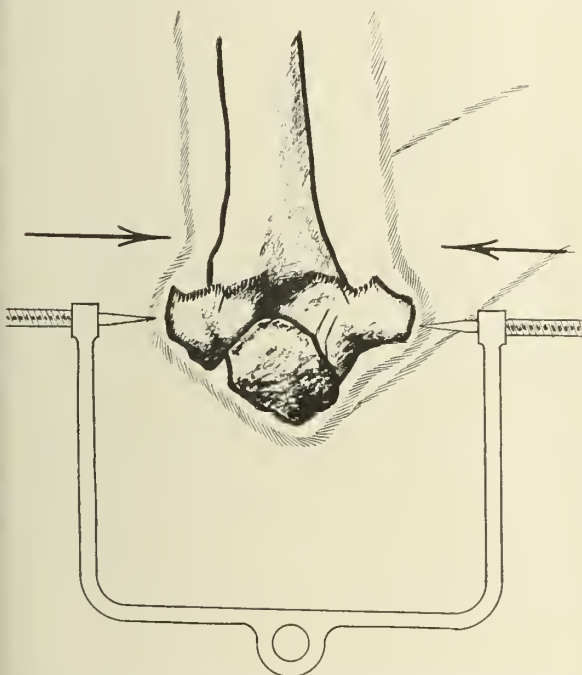


Figure 3. T fracture with the usual displacement of the fragments. Compression of the condyles closes the gap of the vertical component of the fracture accurately, the two lower fragments swinging on the intact ligaments.

its passage through the bone. This incision is then closed and the wire wounds dressed both here and at the shoulder. The patient is then prepared for the application of a body and arm spica, the ordinary Hawley table being sufficient apparatus for the purpose. A plaster-of-Paris jacket is applied over the trunk and arm, but is ended a short distance proximal to the elbow, the arm being abducted to 90 degrees. This is allowed to set. When the plaster is quite hard, traction buttons are attached to the upper wire and tightened. The body and arm spica is then securely anchored to the table. This is most easily done by carrying a sling to the opposite traction arm. An ordinary tractor is applied to the Kirschner wire at the

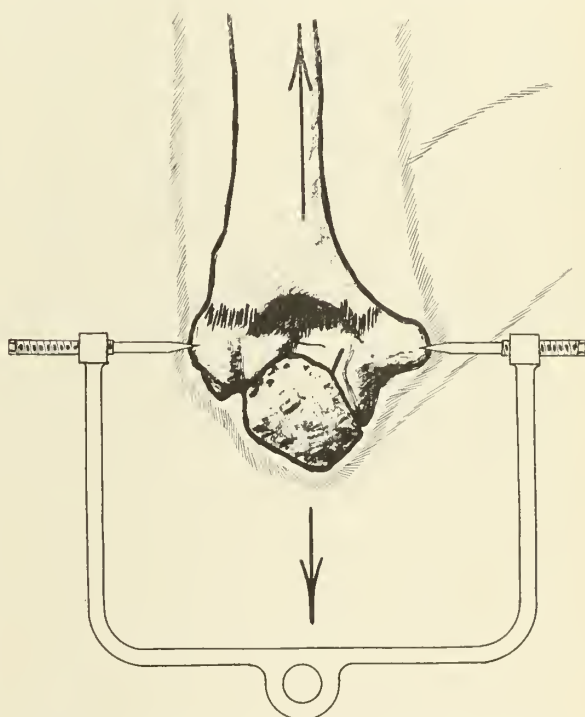


Figure 4. The two lower fragments having been brought into contact, the compression yoke is used to apply the traction necessary to complete the reduction and bring the two lower fragments into apposition with the upper fragment.

by an x-ray examination. If the fragments are not exactly apposed, and this can best be determined by stereoscopic films, a circular saw cut can be carried around the cast at the level of the fracture and a proper adjustment of rotation can be made. At the same time, adjustments in angulation, alignment and length can be carried out. This being completed, the new position can be fixed

with additional turns of plaster-of-Paris bandage.

Check-up x-ray examinations should be repeated to determine the exactness of the correction and readjustments should be made until the position is satisfactory. This adjustment and readjustment within the first few days after the original application of the cast may be tedious but the results justify the time and care expended.

T or Y fractures can be handled in a similar manner. In these, it is not necessary generally to insert the wire through the olecranon. Small incisions are made over the internal and external epicondyles. The sharp points of screw calipers are then brought down through these incisions to the epicondyles and when engaged in the bone, are clamped tight. This will force the two distal fragments into close apposition. A caliper point should first be engaged in the external epicondyle since this is narrower and more difficult to contact. The thick broad internal epicondyle is more easily found. This caliper serves two purposes; that is, it firmly presses the two lower fragments together, and it provides traction and a means of rotation. The procedure for T and Y fractures from here on is the same as for the simple transverse. The caliper is itself incorporated in the plaster.

Certain advantages are apparent in this method. There is a minimum amount of risk involved. Anesthesia is not required after the original reduction. There is very little likelihood of infection. The reduction is superior. The stiffness of the joint after a few weeks is much less than that which follows open reduction and a Lane plating. It is logical to assume that the end results will likewise be superior, although the procedure is too recent to show more than the condition two or three months following injury.

## HEMOPOIETIC DISEASES AND THE NERVOUS SYSTEM\*

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Strictly speaking, the hemopoietic diseases are those which affect primarily the blood forming organs. Aside from the rare instances of ectopic and extramedullary blood formation, hemopoiesis takes place only in the bone marrow, fixed lymphatic tissues, and in the reticulo-endothelial system. The circulating blood, it should be remembered, is no more nor less than the functioning product or extension of the hemopoietic system. Thus the peripheral blood and blood generating organs are complementary; neither one is an inde-

pendent unit, neither is complete without the other. When combined, these two divisions form a unique system in the body in this respect, that the cells manufactured in one location serve their various purposes in other localities.

The primary underlying causes of hemopoietic disorders seem to affect the nervous system but rarely, and likewise the blood forming organs function quite independently of primary and extensive disease of the nervous system. This mutually independent integrity of the two systems is a sharp contrast to the cardiovascular-renal system, for example, where fibrous and sclerotic changes are prone to permeate the whole system. There is, of course, a general interdependence of all organs and systems in the body to which the hemopoietic and nervous systems are no exception. The symptoms of weakness, vertigo, and syncope accompanying an acute hemorrhage illustrate this interdependence, but obviously neither this syndrome nor the acute loss of blood is a primary disease of either system; they are merely functional manifestations.

Thus, while the pathogenesis of hemopoietic diseases and that of nervous diseases do not stand in close relationship, there are, nevertheless, important groups of neurologic symptoms frequently associated with hemopoietic disorders. These relationships will be considered briefly in the following order: first, those associated with disorders of red cell generation; second, those associated with granulopoiesis; third, those associated with lymphopoiesis; and fourth, those associated with generation of the blood platelets. The rare instances of neurologic manifestations associated with abnormal generation of the mononuclears and reticulo-endothelial system will not be included.

### ERYTHROPOIETIC DISORDERS

Under the erythropoietic disorders, the neurologic symptoms commonly observed in the Addison-Biermer type of pernicious anemia are well known. These abnormalities are manifested in about 80 per cent of the cases by paresthesias, hypesthesias, and disturbances of the objective senses. Loss of the sense of motion and position, vibratory sense, two-point discrimination, increased tendon reflexes, spasticity and disturbances of gait may progress until the clinical aspect is that of subacute combined degeneration of the cord (posterolateral sclerosis). An interesting type of case is that in which the cord symptoms are predominant and precede the appearance of the well known blood picture. Psychoses are occasionally encountered, the patient becoming generally irritable and difficult to manage.

The underlying cause of this hemopoietic-neurologic association in pernicious anemia is not under-

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stood. The degree of anemia and the severity of the nervous manifestations are quite independent of each other; either one may antedate the onset of the other and clinical relief from the anemia may in no wise ameliorate the troublesome nervous symptoms. In other words, the supplying of a maturation factor by means of liver, stomach or kidney fractions, which permits delivery of young erythrocytes to the peripheral circulation in normal numbers, and thereby relieves the anemia, may have but little influence in restoring the function of the degenerated neurons in the posterior and lateral columns of the cord. Therefore, despite the probability of a common causal agent, modern remedies are effectual only against the anemic phase. The process of repair and regeneration in the nervous system is notoriously slow and ineffectual, so that the likelihood of any remedy affecting restoration is remote.

In aplastic anemia the most constant nervous symptom is lassitude, but its extent is no more than proportional to the degree of anemia. There is no pathognomonic neurologic syndrome as in pernicious anemia. The supervening coma is a cerebral manifestation of the dissolution imminent and common to all organs.

In polycythemia vera, which from a hemopoietic standpoint is the antithesis of pernicious anemia, the outstanding neurologic symptoms are lassitude, headache, vertigo, tinnitus, surging and congestive sensations. These are due to the extreme vascular engorgement with red cells. Much of the abdominal discomfort is due to the increased weight of the spleen which often reaches to the umbilicus. Neuralgia-like pains in the extremities, even changes in personality, are likewise attributable to the vascular congestion and increased viscosity of the blood. The proportion of erythrocytes to the blood plasma may increase threefold.

#### ABNORMAL GRANULOPOIESIS

The more important nervous symptoms associated with altered generation of the granulocytes are those associated with malignant neutropenia and myelogenous leukemia. One of the first symptoms of malignant neutropenia (agranulocytosis)<sup>1</sup> is the rapid onset of lassitude amounting almost to prostration. Insomnia may be a distressing symptom, and for its relief amidopyrine and barbituric acid derivatives are often taken in increasingly large doses. Since Squier<sup>2</sup> and others have recently called attention to the probability that these drugs may play an important rôle in the etiology of neutropenia, the importance of this symptom can hardly be overestimated. Pain associated with inflamed gingivae, orificial necrotizing lesions and angina, is a con-

stant symptom. A mildly irrational state may be followed in rapid order by active delirium and coma. In patients surviving this illness persistent pain in any part of the body should arouse the suspicion of abscess formation.

The neurologic symptoms arising in the course of myelogenous leukemia are chiefly of mechanical origin, that is, due to infiltrations of both motor or sensory nerve sheaths, and of the meninges by myelocytes. Occasionally hemiplegia, or cranial nerve palsies are traceable to such causes. Besides the dragging sensation of the weight of an enlarged spleen, there may be pain or tenderness in the splenic region due to infarction or perisplenitis.

#### ABNORMAL LYMPHOCYTIC GENERATION

Since the lymph nodes and fixed lymphatic tissues compose a portion of the hemopoietic system, the relationship of diseases of these structures to the nervous system will be considered briefly. For the most part, this association is also on a mechanical basis. For example, the enlargement of lymph nodes may cause pressure or tension on nerve trunks or plexuses. Infiltrations of lymphocytes and lymphoblasts within nerve sheaths and the meninges giving rise to both sensory and motor disturbances, occur in lymphatic leukemia, and lymphosarcoma somewhat more frequently than in the myelogenous type.

The reticular sclerosing type of lymphoma, otherwise known as Hodgkin's disease, may invade the spinal canal and compress the cord, resulting in widespread and serious involvement of the central nervous system. I have reported such an instance of lymphomatous compression of the cord in a case of the larval or latent type of Hodgkin's disease in which the disease was confined almost exclusively to the thoracic lymph nodes.<sup>3</sup> Another symptom which may appear early and confuse the clinical picture of Hodgkin's disease is that of a persistent and severe pruritis. An instance of this distressing symptom came under my observation two years ago in such a case which was otherwise characterized by alternating febrile and afebrile periods<sup>4</sup>—the intermittent fever type, to which attention has been called by Pel<sup>5</sup> and Ebstein<sup>6</sup>.

#### IDIOPATHIC AND THROMBOPENIC PURPURA

When the formation of blood platelets is seriously interfered with, the resultant clinical conditions characterized by a paucity of circulating thrombocytes, are grouped under the heading hemorrhagic or thrombopenic purpura. Based on the anatomic distribution of lesions, idiopathic hemorrhagic purpura with concomitant articular symptoms is known also as Schoenlein's disease or purpura rheumatica. Some patients develop

symptoms attributable to visceral lesions, those of the intestines causing crises of abdominal pain (Henoch's purpura). The cases most difficult to diagnose are those with visceral symptoms without skin lesions. The crises of pain so closely resemble those of certain acute abdominal conditions that operation cannot always be forestalled.

#### SUMMARY

Summarizing the relationship of hemopoietic disorders and associated neurologic symptoms, two points are clear.

1. With the exception of the Addison-Biermer type of pernicious anemia, the same primary underlying etiologic agency rarely attacks the two systems. From a standpoint of integrity they are mutually independent.

2. On the other hand, there are a number of symptoms manifested through the nervous system the recognition of which is of considerable clinical importance. To recapitulate the more outstanding of these: the lassitude and prostration of aplastic anemia; the vertigo, tinnitus, neuralgia-like pains in the extremities and abdominal distress in polycythemia vera; the prostration, angina and insomnia of malignant neutropenia; symptoms due to lymphomatous compression of the cord, and the generalized pruritus in Hodgkin's disease; and the crises of abdominal pain in purpura. In conclusion, the anticipation and prompt recognition of these associations may serve to clear up an obscured and complicated clinical picture.

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#### SOME OF THE CLINICAL MANIFESTATIONS OF CHRONIC ENCEPHALITIS\*

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Chronic encephalitis is a very common clinical picture and its clinical manifestations are many and varied. The syndromes result after an attack of acute epidemic encephalitis—von Economo type; but why call these conditions chronic encephalitis and not the sequelae of an acute encephalitis? It is believed and with definite reasons which will be advanced later on, that many of the manifestations of this condition are attributable to the progressive

action of the causative agent upon the central nervous system. It is true that in many cases after the acute stage, the patients go on to complete recovery and show no definite signs or symptoms at any later date, but there are very many, by far the greater majority, that develop signs and symptoms years after the acute infection with practically no signs in the interval. Then too, there are some cases in which the acute signs and symptoms merge into those which persist for many years with no definite period of freedom between<sup>1</sup>. It will be interesting to note the time of the development of the symptoms of the chronic condition of the 1104 definite cases of acute encephalitis reported in the St. Louis area during the past year.

I will not go into the acute manifestations of encephalitis except for the pathologic picture and the distribution of the lesions, but will try to give you a word picture of some of the more common types of chronic encephalitis which result after an epidemic of the so-called von Economo type. I do not intend to discuss the picture produced by other infections, such as measles, mumps, vaccination, etc. These patients who have had the epidemic type of encephalitis may give a history of having had the "flu," or "grippe," or "sleeping sickness," or some unexplained fever with marked insomnia, or headache or diplopia. Some patients who we see in the clinic say they have had "brain fever" and many of them say that they had it in 1918, 1919, 1920, or 1924. Other patients may give no history of any episode which is suggestive of an acute infection, even on the closest questioning. In fact when one tries to evaluate the history of a previous infection in a well marked chronic case it is often most difficult to do so.

For sake of convenience it will be best to consider the clinical manifestations in general groups. Each group may occur alone or be associated with the manifestations of other groups.

#### 1. *Paralysis agitans syndrome of chronic encephalitis, or the Parkinsonian syndrome.*

This syndrome is the most common one and presents itself in various grades and degrees at various intervals after the acute infection, or the acute infection may even merge into this picture. This syndrome no doubt is fairly familiar to all in practice, but it will not be amiss to repeat some of the important symptoms and signs.

The patient first complains of slowness of movement, stiffness, some pain in back of his neck, loss of pep, or even sometimes later on in the course of the disease when the initial symptoms have been unrecognized, of shakiness and weakness. He frequently says he cannot get his work done on time, and that he cannot carry on the way he formerly was able to do.

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The attitude of the paralysis agitans syndrome of chronic encephalitis is characteristic. The patient, if he is able to walk into the office, will do so slowly with some flexion of the neck. In fact some flexion of the entire spine is usually present. He turns about and moves stiffly. The upper limbs are adducted at the shoulder and flexed at the elbow. The forearm is midway between pronation and supination with the wrist somewhat extended, the fingers moderately flexed and the thumb adducted. In walking there is a loss of the normal coordinated movement of swinging of the arms. This may be more marked on one side than on the other. There is also some festination of the gait. The patient will sit for a long period of time in a chair with no tendency toward spontaneous movement.

Many of the patients frequently state that early in the morning if they hurry they can get dressed and move about fairly well, and then later become completely incapacitated because of stiffness.

The facies are also typical. There is an infrequency of blinking, the eyes are fixed straight forward and there is some impairment or loss of the capacity for ocular convergence. The face has a blank fixed expression and the frequent variations of expression with talking and emotion which one sees in the normal individual are absent. Everything happens with no change in the facial expression. The skin is often greasy, and the mouth is held partly open and saliva may run over the lower lip. The voice is weak with articulation and phonation impaired. Conversation is carried on in an extremely monotonous manner because it is expressionless both as to facial expression and vocal inflection. There is a great tendency toward slurring of the consonants. In some of these cases that show a marked fixity of expression there is some ability to laugh and cry under the appropriate circumstances.

The picture which has been described so far is one of muscular rigidity. It causes the patient to assume the attitude and the facies as described because by doing so the least muscular effort is expended. The rigidity that is present is different from that of the pyramidal tract lesions in that it affects the flexors and extensors equally and does not pick out one group, as is the case with the pyramidal tract. One can test this very easily by grabbing the forearm near the wrist with one hand, the hand with the other hand and attempting to flex or extend the hand at the wrist. With the pyramidal tract lesions one gets first a resistance and then a uniform give, but in the paralysis agitans syndrome of chronic encephalitis one feels first a resistance, a slight give, a resistance, a slight give, and so on until the full amount of movement

is accomplished. This is known as the cog-wheel type of rigidity.

With this rigidity the so-called paralysis agitans tremor sometimes develops. It is not seen as often or to such an amplitude in chronic encephalitis as it is in the senile or true paralysis agitans. With the hand and arm in the characteristic posture, as described, there is a rhythmic to and fro tremor of varying degree which occurs six to eight times a second and may affect the fingers, or the fingers and the wrist, or the entire arm, or the arm and leg, or the arm, leg and head. Sometimes even the lips join with the tremor of the extremities. In all cases the tremor is synchronous. Frequently this tremor is increased in amplitude by emotion or exertion. The patient as a rule can stop this tremor for only a few seconds, and even though it is present he is able to carry out some complicated movements. The patient also is not able to carry out voluntary alternate contraction and relaxation of the muscles of the hand, forearm or leg in a normal manner. There is usually a decrease in the range of the motion and an increase in the rate of the movement. The opposite may occur—the range increased and the rate decreased. The term dysidiadokokinesia is applied to this condition. In more simple terms the patient has difficulty in performing the alternate motion rate.

Other symptoms and signs which are frequently described are palilalia<sup>2</sup>, repeating the same phrase over and over again; micrographia<sup>2</sup>, small writing; kinesia paradoxale<sup>3</sup>, a patient hardly able to walk who can get up suddenly and run or jump; akathisia<sup>4</sup>, moving around constantly; disturbed liver function<sup>5</sup>, and many others. The reflexes are brisk but normal. The sensations are intact and mentally the patients are quite alert.

The patient may have only a few of these symptoms and signs, which may be more pronounced on one side of the body. At any rate the condition is progressive and after a variable length of time he becomes completely incapacitated. The patient ultimately dies, not from the disease, but from an intercurrent infection. This type is the one which is most common and the early stages of which can be easily overlooked if the condition is not borne in mind.

## 2. *Oculogyric spasms of chronic encephalitis.*

This is a phenomenon which is very frequently seen and which is felt to be pathognomonic of chronic encephalitis. It is frequently associated with very mild degrees of the paralysis agitans syndrome, which in some cases are so minimal that they may be completely missed. It may be the only manifestation or it may be associated with some of the other symptoms which will be mentioned. With this condition the patient complains

that suddenly his eyes roll upward and want to stay there. There is no pain, just discomfort. There is no loss of vision and no flashes of light or scotomata. There is sometimes an associated closing of the eyelids, turning of the head upward and to one side, and the desire to sleep. Most of the patients say that if they go to sleep their eyes become normal. They can bring their eyes to a normal horizontal axis during this episode, but it requires a great deal of effort and it is only momentary in duration. These episodes last from a few moments to one-half hour or more. They may occur at intervals of once or twice a year up to several times a day. The eyes return to normal as suddenly as they go into the spasm. The etiology of this is not clear, but it is felt that it has an organic basis and not a psychologic one.

### 3. *Ophthalmoplegic type of chronic encephalitis.*

This type is as a rule not pure, but one sometimes sees inequality of the pupils with some impairment of the pupillary reflexes to light and accommodation and most commonly of all of convergence. There may be a ptosis of one or both eyelids, or there may be dimness or mistiness of vision or perhaps even definite muscle palsy. When the pathology of the condition is considered it is easy to understand how such phenomena can result. This particular type may have no other manifestations, but is frequently seen in conjunction with the paralysis agitans syndrome and the oculogyric spasm types of chronic encephalitis.

### 4. *Narcoleptic type of chronic encephalitis.*

Numerous observers feel that chronic encephalitis gives a clinical syndrome of narcolepsy, but as yet no autopsies of such cases have been reported so that the matter is merely speculative<sup>6</sup>. These individuals usually complain of two things—first narcolepsy, an irresistible desire to sleep which comes on at any time in the day no matter what the patient is doing (riding, walking, working in a coal mine, etc.). The patient must go to sleep for a variable length of time. Upon awakening he is much refreshed and is able to continue with his pleasure or work. The second phenomenon which sometimes occurs with the first, but never alone, is cataplexy. In this the patients will complain that with extreme emotional outbursts of either pleasure or anger they will suddenly become weak and fall to the floor or ground, or if sitting in a chair will slide off. These spells last momentarily following which the patient is all right. There is no loss of consciousness with this particular type of spell.

### 5. *Miscellaneous group.*

This group is a very large one and includes the types not so commonly seen. The most important

types of the group are the hemiplegic type, the myoclonic type, the respiratory tics, the tics of the facial and degulatory muscles, the diabetes insipidus syndrome, the neuritic types, the inversion of the sleep mechanism, convulsions, amyotrophic lateral sclerosis, myasthenia gravis<sup>1</sup>, etc. No discussion will be given here about these since they are not so commonly encountered, and they depend upon a more or less definite history of encephalitis and the absence of other findings.

### 6. *Neurosis group.*

### 7. *Psychosis group.*

In the neurosis and psychosis groups the clinical manifestations are many and varied. Many individuals who fall into the neurosis group are regarded as having psychoneurosis.

What is the pathology of these cases of chronic encephalitis? Let it be stated that it is fairly definitely proved that epidemic encephalitis is caused by a filterable virus that has, like the virus of anterior poliomyelitis, a certain specificity for a certain area in the central nervous system. The virus of anterior poliomyelitis has a certain affinity for the anterior horn cells of the spinal cord, and the virus of epidemic encephalitis has an affinity for the large pigmented cells of the substantia nigra in the midbrain. This substantia nigra is a part of the so-called extrapyramidal system which philogenetically is the old motor system. This does not mean that other parts of the central nervous system are not affected. Any system of fibers may be involved.

In an average case of acute epidemic encephalitis if a series of sections of the cerebrum, cerebellum and brain stem are examined, a marked distribution of lesions is found. There are lesions in the cortex of the cerebrum, in the gray matter surrounding the third ventricle, in the basal ganglia—the substantia nigra especially, around the aqueduct of Sylvius where they are particularly numerous, in the pyramidal tract, in the roof of the fourth ventricle, and in the dorsal half of the pons and medulla. Both gray matter and white matter are affected, but it is predominately the gray matter which is involved<sup>7</sup>.

What are the histopathologic findings? In the acute stages of the disease there are three: first, death of the nerve cells and phagocytosis; second, glial infiltration and proliferation; and third, round cell infiltration of the perivascular blood spaces. In the chronic stages these same findings are present, the main difference being a variance in degree. The death of the nerve cells and phagocytosis is not marked, but there is a more marked glial infiltration and scarring. Sometimes the scarred area can be seen in the substantia nigra



with the naked eye, but for the most part only a small focus of glial is seen. This is extremely hard to find in most cases except in the substantia nigra. Perivascular round cell infiltration is found in the region of the involved parenchyma.

It has been stated earlier in this article that this condition was not the sequelae of acute encephalitis but the condition of chronic encephalitis. It can be understood now why such a term is correct; first, the clinical picture which has been described does not appear as a rule immediately following the acute infection; second, the condition is progressive; and third, the histologic picture indicates an active change in the parenchyma; i. e., glial infiltration and perivascular infiltration.

As to the parts affected causing the symptoms and signs, all observers are agreed now that the Parkinsonian syndrome of chronic encephalitis results from lesions in the substantia nigra. The sites of the lesions causing the other manifestations are still in dispute.

When we remember the teaching of the anatomists that once a nerve cell is destroyed in the central nervous system it is never replaced, and when we know that the prime factor in chronic encephalitis is the death of nerve cells, the futility of attempts at specific therapy are realized. Fortunately there are drugs which help to control some of the distressing symptoms and make the patient more comfortable. For the rigidity, hyoscine, stromin and occasionally atropine are used with very good results for a time. Later these drugs become ineffective. These drugs have little effect on the tremor. For the narcoleptic group ephedrine is used to good advantage sometimes.

#### CONCLUSIONS

1. The clinical pictures which result after epidemic encephalitis of the von Economo type are fairly common and are present in varying degrees.
2. The pictures are not sequelae but the result of a chronic infection.
3. The symptoms being due chiefly to the death of nerve cells, attempts at specific therapy are hopeless but palliative measures may be used.

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## THE RATIONAL TREATMENT OF DIARRHEA

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Diarrhea, as we know it today, is a symptom that has a variety of causes. Therefore in treating it we are treating a symptom as we would fever, pain or any other manifestation of disease process. It is therefore reasonable that we treat diarrhea as a symptom while the underlying cause is being sought and dealt with. Diarrhea differs, however, from most symptoms in that, by itself, or as a direct result of its action, great damage or death may rapidly ensue.

As the title implies, what I shall say will be limited to treatment. No elaborate classification is attempted such as I have given in a previous discussion,\* and others may be found in any textbook on pediatrics. Most of these are now obsolete and have no bearing on the results we wish to obtain. Regardless of any classification, the theory of giving protein milk in so-called fermentative, acid diarrheas and carbohydrates in the proteolytic, alkaline type is no doubt reasonable, but in practice it leads to embarrassment and failure.

In diarrhea that is of any importance at all, time is a vital factor. The rapid loss of fluid from the body quickly leads to marked dehydration of its tissues, generalized anhydremia and the patient dies from intoxication due to this factor. Even today one hears echoes of the clean-out program and an initial cathartic is still recommended by some present day writers. Regardless of the cause of the illness, much ground is lost by such a procedure; one that can only contribute to the further dehydration of the patient. Three factors of treatment present themselves as imperative: first, replenishing the dehydrated tissues; second, putting the intestine in a splint; and third, nourishing the patient. In meeting these indications there is necessarily an overlapping in the results obtained.

In replenishing the dehydrated tissues we simultaneously supply some nourishment. This is done by giving diluted or full strength orange juice, sweetened with any quickly assimilable carbohydrate such as glucose or corn syrup. While orange juice is a systemic alkalizer, it does not alkalize the intestinal contents. Five or ten per cent glucose or corn syrup solution in addition to, or to replace the orange juice, if the latter is refused, should be given as often as the patient will take it. If refused, forced feeding by gavage may be necessary. Unless adequate fluid is given in this manner dessication of the blood is inevitable and toxemia rapidly develops. If the necessary amount

\* Melgaard, B. A.: Diarrheas in Children. *Journal-Lancet*, xlii:444-447 (September 1) 1922.

of fluids cannot be given by mouth, additional quantities must be given intraperitoneally or by hypodermoclysis. In severe cases, blood transfusion may be necessary.

The second part of the treatment is to put the bowel at rest. To do this an opiate is necessary; the camphorated tincture in infants and deodorized tincture in older children offer elasticity of dosage. Giving antiseptic solutions such as bismuth and salol or other astringents have never been of benefit in my hands and the ordeal of giving them tires an already exhausted patient. Likewise, the giving of starch or other enemas is mentioned only to be condemned. They accomplish nothing except to add irritation to the patient. Retention enemas of physiologic salt solution would be of benefit, but they cannot be retained and are therefore useless. In giving opium, the initial dose should be large enough in the judgment of the physician to give quick relief from pain, tenesmus and straining. The aim is to check the movements quickly; next to reduce the dosage, then to increase it gradually until the bowel movements are under control. I never write orders for a given dosage at certain hour intervals, but instruct the patient to take the drug "after each bowel evacuation." In that manner the opiate is automatically stopped when the frequency diminishes. No other drugs are necessary. I am mindful that opiates are not without danger to children because of their intolerance to the drug. So are other therapeutic measures when given carelessly. Nevertheless unless any drug is used to produce a definite effect it is useless to give it. In no place is a definite rapid result more imperative than in diarrhea. I feel that more children have died from a lack of adequate dosage to check the devastating loss of fluid, than from an overdose of opium. The locking of the bowel causing a resorption of toxic products into the tissues occurs in imagination only.

In the third requirement of treatment, that of supplying adequate nourishment, one has to face the "parent hazard." The parents want to feed the child and are encouraged by meddling neighbors who are generous with advice. If the patient is an infant, nothing may be given but water, weak clear tea, toast or cereal water, orange juice and the glucose solution. This diet must be enforced until absolute constipation is established and the stool is formed. It is imperative to assure the attendants that the color of the stool is of no consequence so far as the treatment is concerned. In older children, the same fluids should be given, as well as solids that have a maximum of starch and a minimum of protein added. Milk, egg, albumen, broth, jello or other high protein foods are absolutely contraindicated. Cereals with fruit

juices or Karo syrup, crackers or zwieback with jelly and sugar sticks are suggestive of the type of food to be given. Fruit juice ices are usually gratefully taken but one must stress the fact that ice cream is not permitted.

This routine treatment has been universally successful in patients coming under my care during the past twelve years, except in two extremely dehydrated twin babies seen in consultation late in the disease. This sounds like an extravagant statement but it is true and has convinced me that the type of diarrhea has nothing to do with the form of treatment. The "symptom" diarrhea, caused by a variety of factors, has always responded to this rational, simple treatment while the remote or immediate cause, such as infection elsewhere, was dealt with.

To illustrate that this routine is effective in other than simple diarrheas I will submit one of a number of severe colitis cases that have been so treated.

Nancy S., five years of age, became sick at Thanksgiving time in 1933 with a severe type of colitis. She had numerous bloody stools daily. Her physician took her to the hospital. No organism was found and the stools were habitually acid in reaction. She became worse rapidly, was seen by several consultants and because of acid stools, was kept on a high protein diet. I saw this patient for the first time just before Christmas. She was severely emaciated; her lips were pale, and her skin of a waxy pallor. The picture was typically Finkelstein's decomposition except that it was of an infectious origin rather than due to nutritional disturbance. Her hemoglobin was 50 per cent and a prognosis was made that she would probably die in a few days. To avoid cross infection I took her out of the hospital and secured a nurse to care for her in her home. This procedure is contrary to what one finds in the usual case history where the patient is invariably hospitalized. Desperately ill children invariably do better at home provided a trustworthy nurse is in charge. When physicians generally cease sending intestinal, respiratory and other strictly medical cases to hospitals there will be a definitely lowered mortality rate.

We gave this little girl all the fluids we possibly could and limited her food to starches and sugars. She had terrific hemorrhages and numerous stools daily. I immediately crowded the opiate in the form of deodorized tincture until large doses were given, and the movements were under control. This routine was continued persistently and many times the battle seemed lost. The hemorrhages, however, were quickly reduced and gradually ceased entirely, and we carefully began giving proteins. This was the most extreme case I ever saw,



but the patient is well and has had no recurrence for a year.

Of course simple diarrheas clear up under this type of treatment in two or three days, while those due to infection elsewhere may last until the latter is corrected. Usually, however, the diarrhea is checked promptly even in the presence of the persisting cause. I have recited this extreme case of colitis as illustrative of my conviction that an acid reacting stool is not a contraindication to carbohydrate feeding nor an indication for proteins. My own belief is that carbohydrates, because they are more easily digested, quickly absorbed, burn rapidly and, because of their hygroscopic nature, give the patient a quickly assimilable food. Proteins, on the contrary, being highly complex foods, require an elaborate digestion, are slowly metabolized and absorbed and are therefore not tolerated by the weakened patient.

#### SUMMARY

1. Three important measures in any diarrhea are to: replace the water loss; put the bowel at rest; limit the diet to aqueous solutions, starches and sugars.
2. Give enough opiate actually to quiet the peristalsis—no other drug.
3. Carbohydrates are easily given; are rapidly absorbed; favor water retention.
4. Control nursing care and prevent cross infection by treating the child in his home.

### THE FINLEY HOSPITAL CLINICO-PATHOLOGIC CONFERENCE

#### INTRA-ORBITAL MENINGIOMA (ENDOTHELIOMA) OF THE OPTIC NERVE SHEATH

H. E. THOMPSON, M.D., Dubuque

The case to be reported is of interest because the clinical picture is characteristic of an intra-orbital tumor of the optic nerve, and because the neoplasm, a meningioma, while well recognized, is a rare one.

#### CASE REPORT

The patient, a white woman thirty-six years of age, was admitted to The Finley Hospital because of "bulging of the left eye with loss of vision."

*Past and family histories:* Irrelevant.

*Present illness:* Beginning about one year ago the patient noted that her left eye began to bulge and this very slowly increased. She also noted that the eye tended to turn slightly to the left although

she could use her eye muscles. She gradually lost her vision in the eye.

*Physical examination:* The general examination was negative. The left eye appeared as described by the patient. On testing for vision there was only a faint suggestion of light perception. The ocular muscle movements were fairly good. The head of the right optic nerve was slightly swollen on the temporal side. The head of the left optic nerve was also slightly swollen. The vision on the right was two-thirds normal with a lens. The olfactory sense was normal.

*X-ray examination:* Examination of the skull with special reference to the left orbit showed no

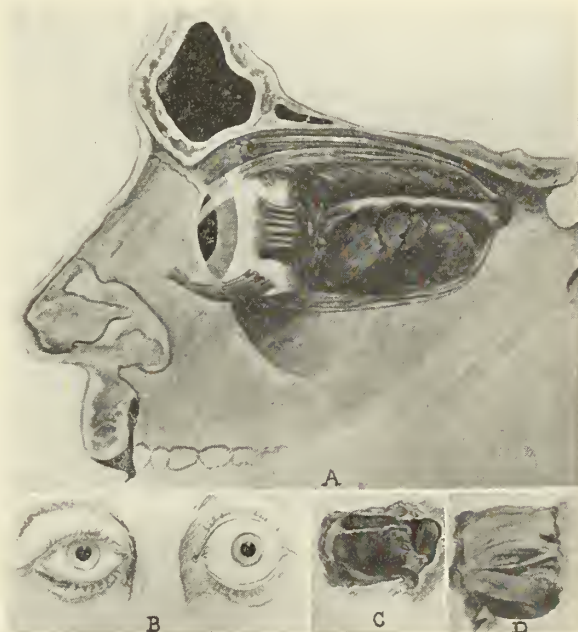


Fig. 1: Semi-diagrammatic drawing showing (A) intra-orbital tumor (B) left exophthalmos and (C and D) tumor externally and on section. Note the optic nerve in the center of the tumor in D.

evidence of bony pathology. Films of the optic foramina on each side showed them to be equal in size. It was concluded that there was no evidence of involvement of the bones of the orbit or skull.

*Provisional clinical diagnosis:* Tumor of the orbit.

*Course in hospital:* Because of the possibility of malignancy and because of the total loss of vision due to nerve destruction it was decided to remove the eye and investigate the orbital tumor rather than to perform the Kronlein operation.

*Operation note:* The eye was dissected loose and the nerve grasped with forceps immediately behind the eye before it was severed from the eyeball. A large mass was found in the orbit, and apparently the nerve entered the central portion. The mass

extended back to the optic foramen. There were no adhesions to the lateral walls of the orbit. The mass was cylindrical, firm and elastic, and could be shelled out easily from the orbit. The tumor was essentially the same size throughout and did not appear to decrease in size even at the optic foramen, in spite of the fact the x-rays had shown no increase in size of the optic foramen. The optic nerve was treated at the optic foramen with electrocoagulation. The conjunctiva was closed with a small drain.

*Pathologic report:* Grossly the specimen was an eyeball and a cylindrical mass three by two by two centimeters, which surrounded the optic nerve. The mass was firm, elastic, and had a thin capsule, with a few small pieces of adipose tissue attached. On section it was pink to gray in color and appeared homogeneous. In the center was the optic nerve which could be separated easily, although the nerve was evidently atrophied. (Fig. 1, c and d.) Microscopically, the sections showed a scant amount of connective tissue with a moderate number of spaces lined by endothelium. Scattered through the stroma were masses of endothelial cells arranged in whirls. (Fig. 2)

*Anatomic diagnosis:* Meningioma of the optic nerve sheath.

*Postoperative course:* There was considerable swelling of the soft tissues about the eye for a month, but this gradually disappeared. Because of the possibility of recurrence x-ray therapy was considered advisable and the following was given: 1320 r anteriorly and 1320 r laterally over the left orbit in fourteen days; 200 kv., 5 ma., 60 cm.,  $\frac{1}{2}$  copper and one aluminum filter; 6 cm. field. To date (six months after the operation) the patient has remained free from evidence of recurrence or involvement of the cranial cavity.

#### DISCUSSION

Up to the beginning of the present century the nomenclature of optic nerve tumors was confused. After an analysis of all available cases and histologic studies, Byers<sup>1</sup> and Hudson<sup>2</sup> placed these tumors in three groups and their classification has been generally accepted. Hudson reported on 182 cases in 1912 and we have found reference to sixty-five additional cases. The tumors are divided into three general groups—gliomas, meningiomas, and fibromas. The gliomas occur six times as frequently as the meningiomas. In general, the gliomas occur in early life and the meningiomas from the third to the fifth decade of life. The meningiomas arise from the optic nerve sheath which is a continuation of the cerebral meninges. They are exactly like the intracranial meningiomas which have been so intensely studied by Cushing and his co-

workers.<sup>3, 4 and 5</sup> Dandy<sup>6</sup> called particular attention to the prechiasmal type of meningioma which may remain within the cranial cavity or which may extend forward through the optic foramen into the orbit. He refers to Hudson's statistics in which 64 of 152 cases (42 per cent) of intra-orbital tumors were only partially removed. Dandy also states that of twenty-three postmortem examinations reported by Byers and Hudson, twenty-one showed intracranial involvement. It is obviously possible that some of these were of the prechiasmal type of meningiomas rather than an extension from the orbit to the cranial cavity.



Fig. 2: Low power microphotograph of the tumor.

Symptoms of an intra-orbital meningioma will vary depending upon whether it arises in the orbit or within the cranial cavity. In the former the meningioma grows very slowly and usually pushes the eyeball straight forward without interference with the ocular muscles. There is a slow loss of vision because of the gradually increasing pressure of the expanding tumor on the optic nerve. In the latter there may be neurologic symptoms or erosion of the bones about the optic foramen which may be demonstrated by x-ray examination. The reader is referred to Dandy's article for the diagnosis of the prechiasmal type of tumor. In the differential diagnosis, metastatic tumors must also be considered. Cohen and MacNeal<sup>7</sup> have reported one case in which there was a combination of a metastasis from a breast carcinoma and an intra-orbital meningioma.

The treatment of meningiomas is surgical. If diagnosed early and before vision has been entirely destroyed it may be possible to remove the tumor without the nerve by the Kronlein operation. In



the prechiasmal type of tumor the Dandy operation is preferable. If vision has been entirely destroyed and the tumor is localized in the orbit, removal of the eyeball and the tumor mass is advisable. Dandy believes that if the growth has extended to the cranial cavity from the orbit an intracranial operation should be done.

The prognosis will depend upon the duration of the tumor. If diagnosed early and localized in the orbit, cure should result. Meningiomas are relatively benign but may recur after variable periods of time. When the tumor has extended to the cranial cavity but has not attained any great size it may still be removed and cure should result. When complete removal is not possible x-ray therapy seems advisable, although it has been utilized in so few cases that its value cannot be properly estimated.

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### HIGHLIGHTS OF THE A. M. A. MEETING

#### New Officers

Dr. James Tate Mason of Seattle was chosen president-elect of the American Medical Association at its recent meeting in Atlantic City. Dr. Mason has been in the practice of surgery in Seattle since 1909 and has been chief surgeon of the Mason Clinic and president of the Virginia Mason Hospital since 1920. He has been very active in the work of the American Medical Association.

Two trustees were elected this year. Dr. J. H. J. Upham, Chairman of the Board, was retired under the new ruling limiting the number of years of service of any one individual, and Dr. James R. Bloss of Huntington, West Virginia, was elected to succeed him. The term of Dr. Joseph A. Pettit terminated and Dr. Ralph A. Fenton of Portland, Oregon, was elected to fill this position.

#### TRANSACTIONS OF INTEREST

##### Birth Control

Since the Committee on Child Health and Protection of the Iowa State Medical Society at the time of our annual meeting recommended that the Board of Trustees of the American Medical Association appoint a committee to study the problems relative to birth control and report their findings to the 1936 session, and since this recommendation was approved by our House of Delegates, it will doubtless be of interest to our members to learn of the action of the

House of Delegates of the American Medical Association on this matter. Several states introduced resolutions similar to the recommendation of our Committee on Child Health and Protection. These resolutions were referred to a Special Reference Committee. This special committee presented a report and resolution to the effect that since the general use of contraceptives is being advocated by large non-medical groups and since the ultimate result of these measures affects the health and welfare of the population of the United States, that a special committee should be appointed by the Board of Trustees to study these related problems and present at least a preliminary report at the 1936 annual session of the American Medical Association. The report also stipulated that nothing in the resolutions should be interpreted as a declaration or action either for or against birth control.

#### Medical Economics

An interesting development along the lines of medical economics was the adoption of a resolution recommended by the Reference Committee on Medical Education to the effect that the House of Delegates of the American Medical Association urge the Council on Medical Education and Hospitals and the Bureau of Medical Economics to continue their endeavors until courses in medical economics have been established in all medical colleges in the country. The committee also suggested that the Council, in collaboration with the Bureau of Medical Economics, outline the principles to be covered in such a course. This recommendation by the Reference Committee on Medical Economics was the result of a resolution passed by the Board of Trustees of the Medical Society of the state of Pennsylvania and introduced to the House of Delegates by the delegate from that state. This resolution was based on a study made by the State Medical Society of Philadelphia in which questionnaires relative to the study of medical economics in medical schools were sent to 71 recognized medical colleges throughout the United States. All but eleven colleges responded and out of that number 45 per cent gave the subject of medical economics no consideration on the curriculum and 55 per cent indicated that they were teaching the subject either by a set course or by lectures in some form. Eighty per cent of those replying were in favor of including this subject in the regular curriculum.

#### Component Societies

The importance of the county medical society as the basic unit of medical organization was stressed and some criticism was directed at those states in which physicians were accepted as members of the state association without holding membership in a component society. Steps were taken to correct this situation by the adoption of an amendment to Section 1, Chapter XI, of the By-Laws of the American Medical Association to read: "Membership in this Association shall continue only so long as the individual is a member of a component society of the constituent association through which he holds membership."

# STATE DEPARTMENT OF HEALTH

*Walter L. Biering*

## A FATAL CASE OF ROCKY MOUNTAIN SPOTTED FEVER IN IOWA

The first case of spotted fever to be reported in Iowa in 1935, occurred in Linn county, with onset of illness June 2. During the past three years, report of a first case of this disease has been made during the month of June. June 5, 1933, witnessed onset of symptoms in the first case of Rocky Mountain spotted fever in Iowa to be reported as such to the State Department of Health; in 1934, the first reported case developed initial symptoms June 17; five cases were reported in 1933; six cases in 1934. The recent case was reported by J. T. Grayston, M.D., of Marion, in Linn County. The following brief account is based on information supplied by Dr. Grayston on a spotted fever record form:

**Symptoms:** The patient, M. L., was a school girl, eight years of age. Symptoms of onset were severe headache, high fever and vomiting. Reflexes were hyperactive as additional evidence of involvement of the central nervous system. The spinal fluid was not under increased pressure. Numerous petechiae appeared early in the course of illness, the eruption rapidly becoming generalized. There was enlargement of the posterior cervical glands. On the third or fourth day, the patient became somnolent, crying out at times. The pulse was rapid and finally irregular. Death ensued June 11, on the ninth day of illness.

**Epidemiology:** The patient, an only child, lived in town and had not been away from home during two weeks prior to the illness. On May 31, several days before onset of symptoms, a tick was found in the child's scalp, after she had been playing in her front yard.

**Diagnosis:** "The first thought," to quote from the case record, "was that of a three-day measles; but the history of a tick having been removed, made one think of infection following the tick bite; also, the patient very rapidly became much too ill for measles."

Sections of the liver and spleen were sent to Iowa City for pathologic study. The Weil-Felix

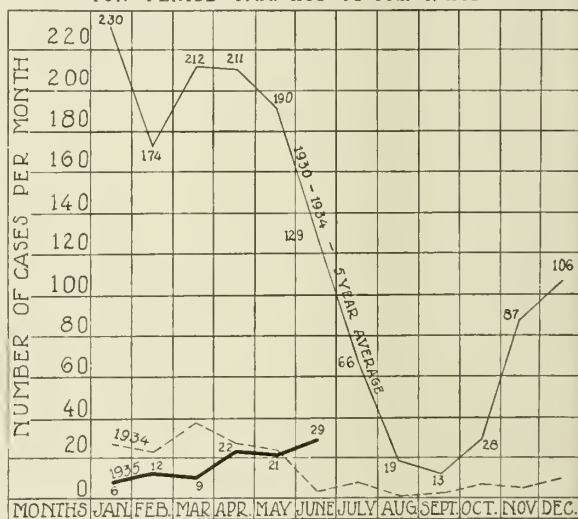
agglutination test performed on blood serum at the State Hygienic Laboratories was positive in the 1/640 dilution. Citrated blood, obtained from a former case of Rocky Mountain spotted fever and given intramuscularly two days before the patient's death, did not affect the course of the disease.

**Reporting of Cases:** Should further cases of Rocky Mountain spotted fever occur, physicians are urged to notify the State Department of Health.

## SMALLPOX IN IOWA

**A Fatal Case of Smallpox:** On Saturday, June 15, a death due to smallpox occurred in Iowa. The patient, O. A., male, thirty-nine years of age, was resident of a rural area in Warren County. Prodromal symptoms were of severe character,

MORBIDITY REPORTS FROM SMALLPOX IN IOWA  
FOR PERIOD JAN. 1930 TO JULY 1, 1935



followed by a papulo-pustular eruption of near-confluent type on face and extremities. The patient recovered sufficiently to enable him to be up and around the house. He returned to bed, however, with fever, distressing cough and complaint of pain in the right leg. On examination, moist râles were heard over both lungs and there were signs of a

(Continued on page 419)



# The JOURNAL of the Iowa State Medical Society

ISSUED MONTHLY

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## A SANER RADIO PROGRAM

Paralleling closely the meteoric development of the automobile from its lowly beginning as a one cylinder horseless carriage to its present stage of mechanical perfection and universal utility, the radio has undergone an equally phenomenal and rapid evolution. The one cylinder efforts of early radio broadcasting secured attention largely because of the universal interest which the public had in this new discovery. Programs were not measured by the quality of the material offered, but rather by the clearness of reception and the distance between the sending and receiving sets. Dial turning was a popular sport. One commented upon the number of stations obtained during an evening, instead of the quality of any particular program received.

As radio broadcasting expanded its audience, and the novelty and newness of the discovery wore off, broadcasters realized that public favor could be maintained only by improving the quality of the program presented. The one cylinder efforts of the early days of radio broadcast gave away to the four cylinder efforts of a few years ago. About this time, certain program sponsors conceived the idea that the children of the nation could be important allies in promoting sales if their interest could be enlisted, and special attention was therefore directed to programs designed for their reception. History again repeated itself and with this new thought in radio broadcast came a one cylinder effort in child entertainment which justly brought severe criticism on these broadcasts. Choosing largely the hours from four to six, program sponsors filled the air with melodramatic theatricals which aroused harmful nervous reactions in the child and fostered recklessness and abandon in his daily actions. Alarmed

parents sought advice from the family physician or pediatrician and so the matter came to our attention. More than two years ago the JOURNAL editorially voiced its opinion against this type of commercial program and felt well rewarded when certain influential organizations, such as the Parent Teachers Associations, took up the thought in active campaign.

Apparently these several efforts have borne fruit and prompted the broadcaster to scrutinize carefully this phase of his broadcasting policy, with the result that one of the larger national broadcasting systems has recently announced a new policy governing two general types of commercial programs: "those which are designed for children, and those involving unpleasant discussions of bodily functions or other matters which similarly infringe on good taste."

While they appreciate that wide variations in viewpoints exist among parents as to the nature of programs which they regard as suitable or unsuitable for their child to hear, and that these same differences frequently prevail among authorities, they have conceived certain guiding principles which they believe will be acceptable to all and which will go far to eliminate those faults which have been charged against these earlier forms of programs. They believe that the following list of specific themes and dramatic treatments are not suitable for children's programs and are, therefore, forbidden in commercial broadcasts over their system:

1. The exalting as modern heroes, of gangsters, criminals and racketeers will not be allowed.
2. Disrespect for either parental or other proper authority must not be glorified or encouraged.
3. Cruelty, greed, and selfishness must not be presented as worthy motivations.
4. Programs that arouse harmful nervous reactions in the child must not be presented.
5. Conceit, smugness, or an unwarranted sense of superiority over others less fortunate may not be presented as laudable.
6. Recklessness and abandon must not be falsely identified with a healthy spirit of adventure.
7. Unfair exploitation of others for personal gain must not be made praiseworthy.
8. Dishonesty and deceit are not to be made appealing or attractive to the child.

We commend this thoughtful attitude of the radio broadcasters and believe that it will go far toward the creation of a better, more modern and more adequate standard in children's programs and will promote the development of a finer social sense in the child audience.

The second phase of radio broadcasting affected by this new pronouncement, while less far reach-

ing in its importance, definitely deserves commendation, since it again shows the studied efforts of the broadcaster and the program sponsor to give the public high grade, ethical and pleasant programs. Regardless of the excellence of the program itself, the broadcasting system believes that many people prefer not to hear on radio programs, discussions of those matters pertaining to the internal body functions, symptomatic results of internal disturbances, or matters which are generally not considered as acceptable topics in social groups. Because of this conviction, they will in the future exclude the discussion of depilatories, deodorants, laxatives or the laxative qualities of any product.

In announcing these standards, the broadcasting companies have concluded with apparent sincerity that the radio as a public institution must be governed by those laws of efficiency and good taste which have long been established by newspapers, magazines and other like periodicals. They have demonstrated a definite step forward. However, eight and twelve cylinder perfection will only be attained, in our opinion, when the radio establishes and maintains that sane, ethical standard in advertising drugs and remedies that is required of publishers and demanded by the pure food and drug act in the printed advertisements of all drugs and remedies. Unfortunately for public protection our present food and drug act, written long before the age of radio, does not include this medium of advertising in its clauses. A new food and drug act, if and when passed, will without doubt require the same truth in advertising drugs and remedies over the radio which is now required when printed forms of advertising are employed. Good taste and public sentiment may accomplish this end without the enactment of law, but this attitude is still unproved.

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#### CONSERVING THE SIGHT OF SCHOOL CHILDREN

Our attention has been drawn to the recent studies of visual defects among school children. As a result of these studies it has been determined that approximately 3,000,000 school children in the United States, or one-eighth of the entire school population, are handicapped in their education by defective eyesight. It is of particular interest to physicians to note that far-sightedness is the most common visual defect, while astigmatism and near-sightedness run second and third.

In our present school system it is difficult and often impossible for the school authorities to recognize visual defects of this sort, particularly

if they exist only to a mild degree. It would seem, therefore, that the family physician must assume to a very large extent the responsibility of properly evaluating the visual acuity of school children among his practice and advising proper school methods for those children whose eyesight cannot be adjusted satisfactorily with correctly fitted glasses. About one child in five hundred of the school population has a serious eye defect of such a character that after everything possible has been done for them they either cannot see well enough to profit by the usual school equipment or may harm their general health in so doing. This group has been designated as "partially seeing," and according to authorities should be in scientifically regulated sight saving classes. At the present time there are 458 sight saving classes maintained by 145 communities where some 6,000 children are given special educational facilities and teaching methods adapted to their visual limitations. It is estimated that there are about 44,000 other children who should be given the advantages of this work, but are denied this privilege at the present time.

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#### DOCTORS NEEDED

Word has come from the office of the District Surgeon of the Iowa District Civilian Conservation Corps; that they have urgent need for many medical doctors at the present time. Young men between the ages of twenty-one (21) and thirty-five (35) years, graduates of Class A medical schools, licensed to practice medicine in some state, and who have completed one year's internship in a recognized hospital, may be appointed as First Lieutenants in the Medical Reserve Corps and assigned to active duty in the medical section, Civilian Conservation Corps. Service is available in all or parts of the Seventh Corps Area, which consists of North Dakota, South Dakota, Nebraska, Kansas, Minnesota, Iowa, Missouri and Arkansas.

They also now have authority to accept men above the age of thirty-two years for medical service in the Civilian Conservation Corps. The time honored pay of \$150.00 for contracts has been waived and the pay is now fixed at approximately the same as for a First Lieutenant, Medical Reserve Corps.

Any doctors desiring such work as offered by the Civilian Conservation Corps are urged to communicate at once with Major J. H. Whitely, Medical Corps, District Surgeon, Iowa District Civilian Conservation Corps, Fort Des Moines, Iowa.



# Minutes of the Iowa State Medical Society Eighty-fourth Annual Session

May 8, 9, 10, 1935---Davenport

## Wednesday Morning, May 8, 1935

The opening session of the Eighty-fourth Annual Session of the Iowa State Medical Society, held at the Masonic Temple, Davenport, May 8, 9, 10, 1935, convened at eight-fifty o'clock, Dr. Gordon F. Harkness, Davenport, President of the Society, presiding.

The invocation was offered by Dean R. F. Philbrook, Episcopal Cathedral, Davenport.

Greetings were extended by Mayor Merle F. Wells, of Davenport.

Dr. Martin D. Ott of Davenport, President of the Scott County Medical Society gave an address of welcome.

The scientific session began with a symposium on carcinoma of the colon, which included the following papers:

"Diagnosis and Symptomatology" by Dr. Ernest E. Shaw of Indianola.

"X-ray" by Dr. Carl L. Gillies of Iowa City.

"Surgical Treatment" by Dr. N. Boyd Anderson of Des Moines.

The symposium was discussed by Drs. Harold E. Graber, Fairfield; Harold H. Webb, Ottumwa; Frank W. Fordyce, Des Moines, and William Jepson, Sioux City.

Dr. Thomas R. Gittins of Sioux City, gave a paper on "Differential Diagnosis of Headaches," which was discussed by Drs. Clarence E. Van Epps of Iowa City, and Caryl L. Nelson of Waterloo.

A paper on "Survey of Cesarean Sections in Iowa," was presented by Dr. Everett D. Plass of Iowa City. Dr. Roy E. Crowder of Sioux City led the discussion of this paper.

Dr. Walter L. Bierring of Des Moines, President of the American Medical Association, was introduced and extended greetings.

Dr. J. Stuart McQuiston, Cedar Rapids, presented a paper on "Amebiasis."

Discussors of this paper were Drs. Albert V. Hardy of Iowa City and J. Stuart McQuiston of Cedar Rapids.

Dr. Gordon F. Harkness of Davenport presented his presidential address.

The meeting adjourned at twelve o'clock.

## Thursday Morning, May 9, 1935

The Thursday morning general session convened at eight thirty-five o'clock, President Harkness presiding.

Dr. Donald C. Konzett of Dubuque, Chairman of the Section on Surgery, introduced the surgical guest speaker of the morning, Dr. Loyal Davis, professor of surgery, Northwestern University Medical School, Chicago, who presented a paper on "The Treatment of Cranio-cerebral Injuries," and conducted a surgical clinic illustrating cases of this type.

Dr. John C. Parsons of Creston, Chairman of the Section on Medicine, introduced the medical guest speaker, Dr. William S. Middleton, professor of medicine, University of Wisconsin Medical School, Madison, who presented a paper on "Postoperative Pulmonary Complications; Their Prevention and Management."

Dr. Charles S. Skaggs, President of the Illinois State Medical Society, was introduced and extended greetings on behalf of his society.

The following papers were presented:

"Chronic Arthritis: Practical Points in Medical and Surgical Treatment" by Dr. Eugene Wolcott of Des Moines; discussed by Dr. James W. Graham of Sioux City;

"Some New Factors in the Diagnosis of Acute Appendicitis" by Dr. Clark N. Cooper of Waterloo; discussed by Dr. Lester D. Powell of Des Moines.

Dr. Walter L. Bierring, President of the American Medical Association, delivered an address.

Dr. Harry S. Gradle of Chicago, guest of the Eye, Ear, Nose and Throat Section, was introduced by Dr. Sumner B. Chase of Fort Dodge, Chairman of the Section. Dr. Gradle presented a paper on "The Management of Eye Injuries by the General Practitioner."

The meeting adjourned at twelve-forty o'clock.

## Friday Morning, May 10, 1935

The Friday morning session convened at eight thirty-five o'clock, First Vice-president Dorsey presiding over the following program:

"Lymph Node Diseases: Their Differential Diagnosis and Treatment" by Dr. William S. Middleton of Madison who also conducted a medical clinic.

"The Diagnosis and Treatment of Peripheral Nerve Injuries" by Dr. Loyal Davis of Chicago, who conducted a surgical clinic.

Dr. Harkness assumed the chair and asked Dr. Lee Forrest Hill of Des Moines to introduce the next speaker. Dr. Hill introduced Dr. C. Anderson Aldrich of Winnetka, Illinois, assistant professor of pediatrics at Northwestern University.

Dr. Aldrich read a paper on "Treatment of Acute Nephritis in Children."

"Rocky Mountain Spotted Fever" was presented by Dr. Carl F. Jordan of Des Moines, and discussed by Dr. Herbert E. Stroy of Osceola.

Dr. Harkness introduced Dr. James S. McLester of Birmingham, Alabama, President-elect of the American Medical Association who presented a paper on "Deficiency Diseases as a Clinical Product."

The report of the transactions of the House of Delegates was given by Secretary Robert L. Parker. President Harkness presented the gavel to the incoming president, Dr. Thomas A. Burcham of Des Moines. Dr. Arthur W. Erskine of Cedar Rapids presented Dr. Burcham with a special gavel which he had made himself of a piece of wood from a tree said to be a direct branch of that from which the original Aesculapian staff was obtained, from the island of Epidauras in the Adriatic Sea. This gavel Dr. Burcham presented to the State Society to become a part of its archives.

Dr. Burcham then introduced the newly named president-elect, Dr. Prince E. Sawyer of Sioux City, who expressed his appreciation of the honor which had been conferred upon him.

The meeting adjourned at twelve forty-five o'clock.

## Section on Ophthalmology, Otology and Rhinolaryngology

Thursday Morning, May 9, 1935

The opening session of the Section on Ophthalmology, Otology and Rhinolaryngology, held in connection with the Eighty-fourth Annual Session of the Iowa State Medical Society, at the Masonic Temple, Davenport, May 9-10, 1935, convened at nine-thirty o'clock, Dr. Sumner B. Chase of Fort Dodge, Chairman of the Section, presiding.

Chairman Chase read his address, "The Business Side of the Practice of Ophthalmology and Otolaryngology." The following papers were presented:

"Management of Hemorrhage in Ophthalmology and Otolaryngology" by Dr. Wayne Foster of Cedar Rapids; discussed by Drs. Edwin C. Cobb of Marshalltown, Elmer P. Weih of Clinton and William W. Pearson of Des Moines; and a discussion prepared by Dr. Lloyd G. Howard of Council Bluffs was presented by Dr. H. M. Ivins of Cedar Rapids.

"The Present Status of the Management of Petrositis" by Dr. F. Harold Reuling of Waterloo; discussed by Drs. Harry H. Lamb of Davenport, Frederick W. Bailey of Cedar Rapids, T. R. Gittins of Sioux City, George C. Albright of Iowa City, J. J. Potter of Iowa City and Cecil C. Jones of Des Moines.

The meeting recessed at eleven-forty o'clock.

Thursday Afternoon, May 9, 1935

The second session of the Section on Ophthalmology, Otology, and Rhinolaryngology was called to order at two o'clock, Chairman Sumner B. Chase, presiding.

A nominating committee from the section was

appointed by the chair, consisting of Drs. James A. Downing of Des Moines, L. R. Tripp of Sioux City and O. L. Thorburn of Ames.

A committee was appointed to arrange for an instruction course for the section at the State University of Iowa. This committee consisted of Drs. William W. Pearson of Des Moines, Edwin C. Cobb of Marshalltown and T. R. Gittins of Sioux City.

The following papers were presented:

"The Present Status of the Management of Myopia" by Dr. Joseph E. Dvorak of Sioux City; discussed by Drs. William F. Boiler of Iowa City, Elmer P. Weih of Clinton and James E. Reeder of Sioux City.

An address on "The Evaluation of Recent So-Called Advances in Ophthalmology" was presented by the guest speaker, Dr. Harry S. Gradle of Chicago.

"The Present Status of the Management of Meningitis Secondary to Otitic or Sinus Infections" by Dr. James A. Downing of Des Moines; discussed by Drs. Dean M. Lierle of Iowa City and William W. Pearson of Des Moines.

"New Therapeutic Agents and Their Practical Value in Ophthalmology" by Dr. Abbott M. Dean of Council Bluffs; discussed by Dr. Stephen A. O'Brien of Mason City.

"New Therapeutic Agents and Their Practical Value in Otolaryngology" by Dr. John A. Thorson of Dubuque; discussed by Dr. Cecil C. Jones of Des Moines.

The report of the nominating committee was presented, and Dr. Cecil C. Jones of Des Moines was elected chairman of the section for the coming year.

The meeting adjourned at five-fifteen o'clock.



## Transactions House of Delegates

### Iowa State Medical Society, Eighty-fourth Annual Session

#### May 8, 9, 10, 1935---Davenport

The first session of the House of Delegates, held in connection with the Eighty-fourth Annual Session of the Iowa State Medical Society, at the Masonic Temple, Davenport, May 8-10, 1935, convened at three-forty o'clock, President Gordon F. Harkness presiding.

President Harkness: I call to order the first meeting of the House of Delegates of the 1935 session of the Iowa State Medical Society. We will first have the roll call. Before we have that, let me say that on these cards everyone should fill out his position, delegate, alternate or state society officer. Remember that a delegate, if he has to leave, will be represented by his alternate, and if the delegate returns the alternate gives way and the delegate is reelected. The roll call, Mr. Secretary.

Secretary Parker: Mr. President, I *move* you that the registration by these cards be accepted as the official roll call.\*

*The motion was regularly seconded and carried.*

President Harkness: I am going to take this opportunity to call for just a few remarks from a man who is an outstanding secretary of a state society, one who has gained a national reputation for his efficiency. He is always thinking of courtesies. He has extended them to me officially and personally. May I introduce Dr. Camp, secretary of our sister society, the Illinois State Medical Society.

Dr. Camp: Mr. President and members of the House of Delegates: I should like to extend the felicitations of the Illinois State Medical Society to this House of Delegates. Our society will be in session week after next in Rockford and any of you who are

able to attend our meeting are certainly going to be cordially welcomed by our society. I have always been very much interested in the deliberations of the House of Delegates of our state medical societies. This is where the real work is done. I think it is very important that every county medical society should send the right type of delegates to be members of the House of Delegates of your state medical society. The duty of such a delegate is not over when he leaves the meeting. He should then go home and tell his component society what has been done, so that all the members of your state organization will be thoroughly familiar with the activities of the society. I think, without a question, this year of all times all of our state medical societies have more duties and responsibilities than ever before in the history of our organizations, and I certainly hope that you will deliberate wisely and well at these meetings.

President Harkness: The next order of business is the approval of the minutes of the Friday morning session, 1934.

Secretary Parker: Mr. Chairman, I *move* you that the report of the minutes of the Friday morning session, 1934, as published in the July Journal, 1934, be approved by this body.

*The motion was regularly seconded, put to a vote and carried.*

Dr. William W. Pearson: Mr. President, I *move* you that the reports as published in the handbook be received.

*The motion was regularly seconded, put to a vote and carried.*

President Harkness: We will now have the report of the secretary.

## Reports of Officers

### REPORT OF THE SECRETARY

To the members of the House of Delegates of the Iowa State Medical Society:

The following report for the year 1934 is respectfully submitted:

#### Membership

The paid membership of the Society for 1931 was 2,310; for 1932, 2,213; for 1933, 2,163, and for 1934, 2,211.

From the Bureau of Licensure of the State Department of Health, we find that there were 3,053 physicians licensed to practice and living in Iowa and some 650 licensed in Iowa but living in other states. The secretaries of the county societies should help us to classify those not accounted for in our membership. During the year 1933, 2,959 physicians were properly accounted for and classified as follows: Active, 2,163; delinquent, 192; eligible non-members, 321; ineligible, 193; retired, 110. A tabulated membership as obtained from our records appears in the

\* The official roll call included sixty-eight delegates, nine alternates, and eighteen officers, or a total of ninety-five.

report. If your county society is not properly reported please help us correct our records.

For 1934 we have 2,211 active members; 115 delinquent; 363 eligible non-members; 169 ineligible, and 111 retired, making a total of 2,969, leaving 84 still not accounted for.

A more detailed account of our 1934 membership is set out in Tables I and II.

TABLE I

Active Members, 1934.....	2,211
Delinquent Members .....	115
Eligible Non-members .....	363
Percentage of Eligible Physicians who are Members .....	82+%
Ineligible Non-members .....	169
Physicians retired or not in practice.....	111
100% County Medical Societies.....	15

Adams	Ida	Union
Audubon	Jackson	Van Buren
Boone	Jasper	Washington
Emmet	Poweshiek	Winneshiek
Floyd	Tama	Wright

We still point with pride to the faithfulness of the profession of our state in their support of the county medical society and through it the approval of organized medicine as represented by the state medical society and American Medical Association.

We must still emphasize the fact that the county medical society is the judge of its own membership, but the county society is the only portal of the state society and the American Medical Association; therefore, every reputable and legally registered physician in Iowa who is practicing or will agree to practice non-sectarian medicine should be entitled to membership.

I wish at this time to express my appreciation to the county society secretaries for their efforts in keeping up the high percentage of membership in their societies. It is a thankless job and requires more time and energy than the members realize. Members should contact the secretary more than they do. In too many cases the secretary is looked upon as a collector and in some cases he earns a good commission.

TABLE II  
(See next page)

### County Society Contracts

As stated in my 1933 report, the "Iowa Plan" of contract between the county medical society and the county board of supervisors for care of the indigent sick is still receiving increased attention from other states and has received national recognition as is evidenced from the following excerpts quoted from "Care of the Indigent Sick" a booklet published by the Bureau of Economics of the American Medical Association:

"In 1930, the medical profession was not wholly unprepared to meet the critical situation. The most satisfactory methods of supplying medical care to the indigent prior to that time had been devised, experimented with and put into operation by organized medicine. One of these methods that contained the germs of much later development was the 'Iowa Plan.' It may be noted here, in anticipation of the later discussion of Federal Emergency Relief that the national scheme embodied many features of the 'Iowa Plan.' It is also significant that when the federal plan was adopted, it was the opinion of the Iowa State Relief Administrator that the existing arrangements should be maintained."

"When the F. E. R. A. came into operation the state medical society was prepared to cooperate, but its previously recommended schedule of fees, and the existing arrangements were found to be so satisfactory that no essential change was necessary."

I doubt that there is a state in the union where so little change was found necessary in order to fulfill the requirements of the F. E. R. A. for use of federal funds for medical care. It is needless in this report to go into detail in describing the "Iowa Plan for Emergency Medical Care" as devised and perfected by Doctor T. C. Denny and published in the March JOURNAL.

### Office Equipment

In the past year a mimeograph duplicating machine and a new addressograph have been added to the equipment in the office. This has made possible more efficiency in our correspondence and various other services, both to the individual doctor and to the county medical societies. These two machines were indispensable in helping get out the additional work created by this year's legislative program.

### Financial Report

The secretary's financial report as required by the constitution and by-laws is incorporated in the annual audit prepared by a certified public accountant and is published elsewhere in the handbook.

I wish again to thank the officers and committees for their support in the task of trying to coordinate all the different activities of a well organized state medical society.

Robert L. Parker, Secretary



TABLE II\*

County	1934 Membership	Delinquent Members	Eligible Non-Members	Ineligible Non-Members	Not in Practice or Retired	Percentage of Eligible Physicians Who Are Members
Adair	7	1	.....	.....	1	88
Adams	7	.....	.....	.....	.....	100
Allamakee	6	.....	6	2	.....	55
Appanoose	11	2	7	.....	.....	55
Audubon	9	.....	.....	.....	.....	100
Benton	17	1	5	.....	.....	71
Black Hawk	64	1	1	5	1	97
Boone	24	.....	.....	.....	2	100
Bremer	14	.....	3	1	4	82
Buchanan	16	.....	5	2	.....	76
Buena Vista	12	.....	6	.....	3	67
Butler	11	.....	3	2	1	79
Calhoun	19	.....	1	.....	.....	95
Carroll	20	.....	1	.....	1	95
Cass	22	.....	5	4	.....	81
Cedar	7	.....	.....	.....	4	39
Cerro Gordo	43	1	10	2	1	98
Cherokee	14	3	8	2	.....	54
Chickasaw	15	.....	2	1	.....	88
Clarke	8	.....	2	.....	.....	80
Clay	9	.....	7	.....	.....	56
Clayton	13	2	6	2	.....	62
Clinton	38	5	6	2	3	78
Crawford	5	8	2	3	4	33
Dallas-Guthrie	37	1	9	1	.....	78
Davis	11	.....	2	.....	2	85
Decatur	8	1	5	.....	.....	57
Delaware	6	3	4	5	.....	46
Des Moines	34	1	9	2	1	77
Dickinson	10	.....	2	.....	.....	83
Dubuque	56	1	7	13	1	88
Emmet	13	.....	.....	.....	.....	100
Fayette	16	3	11	1	1	53
Floyd	16	.....	.....	4	.....	100
Franklin	9	.....	4	.....	.....	69
Fremont	12	.....	3	.....	2	80
Greene	15	.....	5	.....	1	75
Grundy	6	3	1	.....	.....	60
Hamilton	1	21	.....	.....	2	5
Hancock-Winnebag	12	4	9	.....	2	48
Hardin	25	.....	1	1	2	96
Harrison	17	1	5	.....	.....	74
Henry	10	.....	11	.....	.....	48
Howard	11	.....	1	.....	1	92
Humboldt	6	.....	4	.....	.....	60
Ida	11	.....	.....	.....	2	100
Iowa	12	.....	5	1	3	71
Jackson	16	.....	.....	1	2	100
Jasper	35	.....	.....	.....	1	100
Jefferson	16	.....	1	1	1	95
Johnson	119	1	20	1	4	85
Jones	14	2	1	3	.....	82
Keokuk	13	1	5	5	.....	68
Kossuth	10	5	5	.....	1	50
Lee	40	.....	4	4	3	91
Linn	106	1	10	6	9	91
Louisa	3	10	1	2	1	21
Lucas	12	1	1	.....	2	86
Lyon	9	1	1	1	1	82
Madison	10	.....	2	.....	3	77
Mahaska	20	.....	6	3	1	77
Marion	22	.....	2	2	1	92
Marshall	42	.....	1	4	.....	93
Mills	11	2	.....	1	2	85
Mitchell	9	.....	5	2	.....	64
Monona	8	2	3	1	2	62
Monroe	7	.....	5	1	.....	59
Montgomery	11	.....	6	1	2	65
Muscatine	19	.....	.....	2	2	70
O'Brien	14	8	.....	2	.....	82
Osceola	8	1	2	.....	.....	80
Page	21	1	8	2	.....	70
Palo Alto	12	.....	1	.....	1	92
Plymouth	12	.....	13	.....	.....	48
Pocahontas	12	.....	5	1	.....	67
Polk	207	10	22	21	5	87
Pottawattamie	56	.....	8	8	2	88
Poweshiek	24	.....	.....	.....	.....	100
Ringgold	10	.....	2	.....	.....	83
Sac	17	.....	1	.....	.....	94
Scott	91	.....	.....	13	1	99
Shelby	9	.....	2	.....	3	82
Sioux	13	1	5	.....	1	68
Story	36	.....	1	3	1	97
Tama	23	.....	.....	2	1	100
Taylor	11	.....	3	.....	.....	79
Union	16	.....	.....	2	3	100
Van Buren	15	.....	.....	.....	.....	100
Wapello	42	.....	3	3	4	93
Warren	11	.....	2	1	1	85
Washington	21	.....	.....	1	1	100
Wayne	11	.....	4	.....	.....	85
Webster	37	2	3	1	.....	88
Winneshiek	16	.....	.....	2	.....	100
Woodbury	120	2	9	9	4	91
Worth	8	.....	2	.....	.....	80
Wright	21	.....	.....	1	.....	100
Total	2211	115	363	169	111	82+%

\*This report is based on 1934 membership.

Secretary Parker: Mr. President, I have nothing further to add to the published report in the hand-book other than that the present status of membership for this year is 2,073 as compared with 2,063 a year ago today.

President Harkness: You have heard the report of the secretary. What is your pleasure? The chair will entertain a motion for its approval.

Dr. Oliver J. Fay: I *move* the approval of the secretary's report.

*The motion was regularly seconded, put to a vote and carried.*

President Harkness: We will now have the report of the treasurer.

### REPORT OF THE TREASURER

House of Delegates, Iowa State Medical Society:

For a detailed report of the financial transactions of the society for the year 1934, I refer you to the auditor's report published herewith.

I wish to call your attention to the fact that while actually our net income represents the difference between our total income for the year and our expenditures for that time, that that income includes an unearned income which represents the surplus of the year before which is brought over into the next year as income. For 1934 we started out the year with an income of \$4,378.70, which represented the surplus brought over from 1933. In 1933 we started out with the surplus of \$2,747.12 brought over from 1932. In 1935 we will start out with an income of \$3,252.48, which is brought over from 1934.

There was an increase of income for the year 1934 over that of 1933 of \$3,080.31. This increase was represented in many sources:

Dues .....	\$1,052.32
Advertising .....	805.02
Reprints .....	110.51
Miscellaneous .....	23.24
Speakers Bureau .....	700.20
Annual Sessions .....	602.95
Interest on Savings Account.....	191.79

The two sources of income that were less in 1934 than in 1933, were:

Interest on Bonds.....	\$ .01
Miscellaneous Adjustments .....	405.71

The financial affairs of the society ran along very smoothly during the entire year. The Board of Trustees, the Secretary, the other officers, and the office personnel have worked hard and untiringly in the interests of the State Society.

Harold J. McCoy, Treasurer

### AUDITOR'S REPORT

December 31, 1934

Oliver J. Fay, M.D., Chairman,  
Board of Trustees,  
Iowa State Medical Society,  
Des Moines, Iowa.

Dear Sir:

In accordance with your instructions, we have made an examination of the books of account of the

### IOWA STATE MEDICAL SOCIETY DES MOINES, IOWA

for the year ended December 31, 1934, and now submit our report thereon, together with the following statements:

Exhibit "A"—Cash Account.

Exhibit "B"—Income Account.

Schedule No. 1—Expenditures (Treasurer).

Schedule No. 2—Expenditures (Speakers Bureau).

The following comments are made on the principal items included in the foregoing statements:

### CASH ACCOUNT

A detailed cash account for the year ended December 31, 1934, is given in Exhibit "A," showing the balance on hand at the beginning of the year, receipts and disbursements during the year and the balance in the respective bank accounts at the close of the year, as at December 31, 1934, a summary of which is as follows:

Cash in Banks, December 31, 1933.....\$ 4,403.79  
Add: Receipts (per Exhibit "A") ..... 35,275.54

Total Balance December 31, 1933 and  
Receipts ..... 39,679.33

Less: Expenditures (Schedule  
No. 1) .....\$29,550.60

Expenditures (Schedule  
No. 2) ..... 2,352.68

Bank Charges and Mis-  
cellaneous (Exhibit  
"A") ..... 119.78 32,023.06

Cash in Banks, December 31, 1934.....\$ 7,656.27

Represented by:

Iowa - Des Moines National  
Bank and Trust Co.....\$ 180.07  
Bankers Trust Company Bank 375.97  
Des Moines Savings Bank and  
Trust Co. .... 7,100.23

Total as above.....\$ 7,656.27



All receipts as herein shown were traced to the respective depository accounts and all disbursements therefrom were supported by cancelled checks as set out by Schedules No. 1 and No. 2, respectively.

The balances in the various bank accounts were satisfactorily reconciled with their statements as at December 31, 1934, and the balances shown thereon verified by direct communication with the banks.

Schedules No. 1 and No. 2, respectively, set out in detail the expenditures for the year ended December 31, 1934, all of which were supported by checks drawn by the treasurer upon vouchers issued by the secretary. Attached to and supporting these vouchers were invoices from various creditors properly approved by the Board of Trustees.

# INCOME AND EXPENSE ACCOUNT AND INVESTMENT ACCOUNT

A detailed statement of Income and Expense and the Investment Account for the year ended December 31, 1934, is set out by Exhibit "B," which shows excess income received over expenditures of \$3,252.48, as compared to an excess income over expenditures for the year 1933 of \$4,378.70.

The following statement sets out in comparative form the income and expenditures for the years 1934 and 1933:

	1934	1933	Increase or Decrease
<b>INCOME:</b>			
Receipts from Secretary .....	\$27,639.87	\$25,648.78	\$1,991.09
Speakers Bureau..	4 350.90	3,650.70	700.20
Annual Sessions ..	1,926.45	1,323.50	602.95
Interest on Bonds..	1,130.62	1,130.63	.01
Interest on Savings Account .....	192.00	.21	191.79
Miscellaneous ....	35.70	441.41	405.71
<b>TOTAL INCOME FOR- WARDED</b> ...	\$35,275.54	\$32,195.23	\$3,080.31
<b>EXPENDITURES:</b>			
Schedule No. 1....	\$29,550.60	\$25,567.12	\$3,983.48
Schedule No. 2....	2,352.68	2,209.08	143.60
Bank Charges and Miscellaneous ..	119.78	40.33	79.45

## TOTAL EXPEN-

DITURES ...\$32,023.06 \$27,816.53 \$4,206.53

## EXCESS INCOME

### OVER EXPENDI-

TURES .....\$ 3,252.48 \$ 4,378.70 \$1,126.22

The following transactions show the changes in the investment account during the year 1934:

Net Income during the year, from Exhibit "B" .....\$ 3,252.48

Add: Cash in Banks beginning of the year 1934 ..... 4,403.79

Treasury Bonds on hand at the beginning of 1934..... 34,601.53

Total Funds as at December 31, 1934..\$42,257.80

Represented by:

Cash in Banks—

Iowa-Des Moines National Bank and Trust Company .....\$ 180.07

Bankers Trust Company Bank..... 375.97

Des Moines Savings Bank and Trust Company ..... 7,100.23

Total Cash in Banks.....\$ 7,656.27

Treasury Bonds:

3%, Due 9-15-55 (Face Value) ..... \$ 9,000.00

3½%, Due 3-15-43 (Face Value) ..... 25,500.00

Premium paid on acquisition ..... 101.53

Total Cost of Bonds..... 34,601.53

Total Cash and Bonds, Dec. 31, 1934..\$42,257.80

The Treasury Bonds as shown above are in safe keeping with the Iowa-Des Moines National Bank and Trust Company, and were verified by direct communication with the depository.

In conclusion we wish to record our appreciation to those who extended courtesies during our examination and any additional information desired will be gladly furnished upon your request.

Respectfully submitted,

W. WIDDUP & COMPANY,  
Certified Public Accountants.  
Chartered Accountants.

**Exhibit "A"**  
**Cash Account**  
**For the Year Ended December 31, 1934**

	Total	Ia.-Des Moines Nat'l Bank & Trust Co.	Bankers Trust Company	Des Moines Savings Bank
<b>CASH IN BANKS:</b>				
December 31, 1933.....	\$ 4,403.79	\$ 1,811.31	\$ 2,584.25	\$ 8.23
<b>RECEIPTS:</b>				
Dues .....	\$21,184.50	\$ 0...	\$21,184.50	\$ 0...
Advertising .....	5,302.70	0...	5,302.70	0...
Reprints .....	1,066.66	0...	1,066.66	0...
Miscellaneous .....	86.01	0...	86.01	0...
Total .....	\$27,639.87	\$ 0...	\$27,639.87	\$ 0...
Receipts, Speakers Bureau:				
Fees .....	\$ 4,335.50	\$ 0...	\$ 4,335.50	\$ 0...
Traveling Expense .....	15.40	0...	15.40	0...
Total .....	\$ 4,350.90	\$ 0...	\$ 4,350.90	\$ 0...
Annual Sessions .....	\$ 1,926.45	\$ 0...	\$ 1,926.45	\$ 0...
Interest on Treasury Bonds.....	1,130.62	1,130.62	0...	0...
Interest on Savings Account.....	192.00	0...	0...	192.00
Returned Check Payments.....	24.70	0...	24.70	0...
Cancelled Expenditure Checks.....	11.00	11.00	0...	0...
<b>TOTAL ALL RECEIPTS.....</b>	<b>\$35,275.54</b>	<b>\$ 1,141.62</b>	<b>\$33,941.92</b>	<b>\$ 192.00</b>
<b>TOTAL RECEIPTS INCLUDING CASH IN BANKS</b>				
JANUARY 1, 1934.....	\$39,679.33	\$ 2,952.93	\$36,526.17	\$ 200.23
TRANSFERS TO TREASURER'S ACCOUNT.....	\$ 0...	\$42,140.00	\$36,140.00	\$ 6,000.00
TRANSFER TO SAVINGS ACCOUNT.....	0...	13,000.00	0...	\$13,000.00
<b>BALANCE AFTER TRANSFERRING FUNDS.....</b>	<b>\$ 0...</b>	<b>\$32,092.93</b>	<b>\$ 386.17</b>	<b>\$ 7,200.23</b>
<b>EXPENDITURES:</b>				
Expenses—Schedule No. 1.....	\$29,550.60	\$29,550.60	\$ 0...	\$ 0...
Expenses—Schedule No. 2.....	2,352.68	2,352.68	0...	0...
Bank Charges and Returned Checks.....	19.78	9.58	10.20	0...
To Dr. McGreedy (Special).....	100.00	0...	0...	100.00
<b>TOTAL EXPENDITURES .....</b>	<b>\$32,023.06</b>	<b>\$31,912.86</b>	<b>\$ 10.20</b>	<b>\$ 100.00</b>
<b>CASH IN BANKS: As at December 31, 1934.....</b>	<b>\$ 7,656.27</b>	<b>\$ 180.07</b>	<b>\$ 375.97</b>	<b>\$ 7,100.23</b>

**Exhibit "B"**

**Income and Expense Account Including Investment**  
**For the Year Ended December 31, 1934**

<b>INCOME:</b>		<b>INVESTMENT ACCOUNT:</b>	
Received from Secretary:		Cash in banks and Treasury	
Dues .....	\$21,184.50	Bonds on hand, December	
Advertising .....	5,302.70	31, 1933:	
Reprints .....	1,066.66	Cash in Banks .....	\$ 4,403.79
Miscellaneous .....	86.01	Treasury Bonds. Cost ...	34,601.53
Total .....	\$27,639.87	(Face Value \$34,500.00)	
Speakers' Bureau:		<b>TOTAL INVESTMENT</b>	
Fees .....	\$ 4,335.50	ACCOUNT .....	\$39,005.32
Travel Expense .....	15.40	<b>TOTAL CASH IN BANKS AND</b>	
Annual Sessions .....	1,926.45	<b>TREASURY BONDS ON HAND:</b>	
Interest from Liberty Bonds.....	1,130.62	As at December 31, 1934.....	\$42,257.80
Interest from Savings Account.....	192.00	<b>REPRESENTED BY:</b>	
Miscellaneous Adjustments and Return		Treasury Bonds (Face Value \$34,500.00)	
Checks .....	35.70	Cost .....	\$34,601.53
<b>TOTAL INCOME .....</b>	<b>\$35,275.54</b>	Cash in Banks:	
<b>EXPENDITURES—EXPENSES:</b>		Iowa-Des Moines National	
Expenses, Schedule No. 1....	\$29,550.60	Bank and Trust Co. ....	\$ 180.07
Expenses, Schedule No. 2....	2,352.68	Bankers Trust Company .	375.97
Bank Charges and Return		Des Moines Savings Bank	
Checks .....	19.78	and Trust Co. ....	7,100.23
Dr. McGreedy (Special) .....	100.00	<b>Total Cash in Banks.....</b>	<b>7,656.27</b>
<b>TOTAL EXPENSES .....</b>	<b>32,023.06</b>	<b>TOTAL CASH IN BANKS AND</b>	
<b>EXCESS OF INCOME OVER EX-</b>		<b>TREASURY BONDS (As at</b>	
<b>PENSES FOR THE YEAR ENDED</b>		<b>December 31, 1934 (As above).</b>	<b>\$42,257.80</b>
<b>DECEMBER 31, 1934.....</b>	<b>\$ 3,252.48</b>		



## Schedule No. 1

## EXPENDITURES

For the Year Ended December 31, 1934

Date 1934	Check No.	Order No.	Drawn in Favor of	In Payment of	Distribution	Amount
1-3	2463	4412	Postmaster	Legislative Committee Postage	Legislative Committee	\$ 23.44
1-6	2464	4413	Smith & Smith Printing Co.	Envelopes—December, 1933	Rent and Office Supplies	6.80
1-6	2465	4414	Wallace-Homestead Co.	2,500 Stamped Envelopes	Stationery and Printing	81.60
					Stationery and Printing	18.25
1-9	2466	4415	Wallace-Homestead Co.	December, 1933—Printing	Journal Ptg. and Eng.	506.77
					Reprints	22.06
1-15	2467	4416	Cash	Office Postage, Etc., Petty Cash	Rent and Office Supplies	10.00
1-25	2468	4417	Iowa Press Clipping Bureau	December, 1933—Clippings	Journal Ptg. & Eng.	15.27
1-25	2469	4418	E. M. Myers	Telephone and Postage	Trustees	2.53
1-25	2470	4419	Robert L. Parker	January, 1934—Salary	General Salaries	50.00
1-25	2471	4420	Grace J. McDonald	January, 1934—Salary	General Salaries	75.00
1-25	2472	4421	R. R. Simmons	January, 1934—Salary	Journal Ptg. and Eng.	100.00
					General Salaries	35.00
1-25	2473	4422	Virginia Stewart	January, 1934—Salary	Journal Ptg. & Eng.	115.00
1-25	2474	4423	Dorothy Nelson	January, 1934—Salary	Speakers Bureau	150.00
1-25	2475	4424	Dorothy McCarthy	January, 1934—Salary	General Salaries	200.00
1-25	2476	4425	Register and Tribune Co.	Reprints of Dr. Fay's Letter	Legislative Committee	14.95
					Rent and Office Supplies	10.50
1-25	2477	4426	N. W. Bell Telephone Co.	Telephone Services—January, 1934	County Society Services	.65
					Council	.85
					Speakers Bureau	2.75
1-25	2478	4427	F. A. Hennessy	Traveling Exp., Council Meeting	Council	20.90
1-25	2479	4428	L. R. Woodward	Traveling Exp., Council Meeting	Council	14.35
1-25	2480	4429	F. P. Winkler	Traveling Exp., Council Meeting	Council	23.50
1-25	2481	4430	James E. Reeder	Traveling Exp., Council Meeting	Council	20.00
1-25	2482	4431	C. W. Ellyson	Traveling Exp., Council Meeting	Council	14.00
1-25	2483	4432	A. W. Erskine	Traveling Exp., Council Meeting	Council	14.50
1-25	2484	4433	C. A. Boice	Traveling Exp., Council Meeting	County Society Services	3.50
					Council	13.00
1-25	2485	4434	H. A. Spilman	Traveling Exp., Council Meeting	Council	12.00
1-25	2486	4435	James G. Macrae	Traveling Exp., Council Meeting	Council	7.50
1-25	2487	4436	M. C. Hennessy	Traveling Exp., Council Meeting	Council	15.30
1-25	2488	4437	C. S. Cornell	Council Meeting, Traveling Exp.	Council	5.50
1-25	2489	4438	Chas. B. Taylor	Council and Trustees Meeting— Travel Expenses	Trustees	4.80
					Council	4.80
1-25	2490	4439	Gordon F. Harkness	Council Meeting, Traveling Exp.	Trustees	5.43
					Council	5.42
1-25	2491	4440	E. M. Myers	Traveling Exp., Trustees Meeting	Trustees	4.80
1-25	2492	4441	L. C. Kern	Traveling Exp., Monroe Co. Meeting	Other Committees	49.50
1-25	2493	4442	W. F. Amdor	Traveling Exp., Monroe Co. Meeting	Other Committees (1-17-34)	10.00
1-25	2494	4443	E. B. Bush	Traveling Exp., Monroe Co. Meeting	Other Committees (1-18-34)	3.20
1-25	2495	4444	Robert L. Parker	Traveling Exp., Marion Co. Meeting	County Society Services	4.00
1-25	2496	4445	Security Envelope Co.	100 Red Filing Envelopes	Rent and Office Supplies	13.56
1-25	2497	4446	Bankers Building Corp.	January, 1934, Rent	Rent and Office Supplies	107.00
1-25	2498	4447	Iowa-Des Moines National Bank	Safekeeping 7-1-33 to 12-30-33	Administrative, Misc.	17.25
1-25	2499	4448	Western Union	Telegraph Services	Administrative, Misc.	1.55
	2500	4449	Void		Speakers Bureau	.77
1-25	2501	4450	Zaisers	1 S. H. Steel Cupboard, \$5.50	Rent and Office Supplies	9.30
				Office Supplies, \$35.15	Stationery and Printing	31.35
1-25	2502	4451	Central Engraving Co.	Half-tones for Journal	Journal Ptg. & Eng.	25.11
1-25	2503	4452	W. Widdup and Co.	Audit for 1933	Administrative, Misc.	100.00
1-25	2504	4453	Dutcher, Walker and Ries	Legal Services, 4th Quarter, 1933	Medico-Legal	75.00
1-25	2505	4454	Postmaster	Post Cards	County Society Services	5.20
2-3	2507	4456	Postmaster	Journal Postage	Journal Ptg. & Eng.	100.00
2-14	2508	4457	Cash	Office Postage	Rent and Office Supplies	10.00
2-21	2520	4469	Haas Sign Shop	Signs, Re: Co. Contract	Stationery and Printing	6.50
2-21	2521	4470	Iowa Press Clipping Bureau	Journal, 1934, Clippings	Journal Ptg. & Eng.	15.92
2-21	2522	4471	Des Moines Clean Towel Service	Towel Service, Dec., Jan. and Feb.	Rent and Office Supplies	3.75
					Administrative, Misc.	3.08
2-21	2523	4472	N. W. Bell Telephone Co.	Telephone Services	Rent and Office Supplies	10.50
					Other Committees	5.35
					Speakers Bureau	4.95
2-21	2524	4473	Robert L. Parker	February, 1934, Salary	General Salaries	50.00
2-21	2525	4474	Grace J. McDonald	February, 1934, Salary	General Salaries	75.00
2-21	2526	4475	R. R. Simmons	February, 1934, Salary	Journal Ptg. & Eng.	100.00
2-21	2527	4476	Dorothy Nelson	February, 1934, Salary	Speakers Bureau	150.00
2-21	2528	4477	Virginia Stewart	February, 1934, Salary	General Salaries	35.00
					Journal Ptg. & Eng.	115.00
2-21	2529	4478	Dorothy McCarthy	February, 1934, Salary	General Salaries	200.00
2-21	2530	4479	Robert L. Parker	Traveling Exp., Sioux Valley Med. Soc.	Administrative, Misc.	24.10
2-21	2531	4480	J. Clark Cooper	Traveling Exp., 11th Dist. Meeting	County Society Services	7.45
2-21	2532	4481	W. H. Halloran	Traveling Exp., 11th Dist. Meeting	County Society Services	8.00
2-21	2533	4482	J. F. Aldrich	Traveling Exp., 11th Dist. Meeting	County Society Services	7.00
2-21	2534	4483	A. L. Nielson	Traveling Exp., 11th Dist. Meeting	County Society Services	5.65
2-21	2535	4484	T. B. Lacey	Traveling Exp., 11th Dist. Meeting	County Society Services	2.75
2-21	2536	4485	R. L. Barnett	Traveling Exp., 11th Dist. Meeting	County Society Services	6.25
					Administrative, Misc.	.80
					Council	.34
2-21	2537	4486	Western Union	January, 1934, Telegraph Service	Medico-Legal	.76
					Annual Session	.96
					Journal Ptg. & Eng.	.57
2-21	2538	4487	Zaisers	Office Supplies	Speakers Bureau	7.49
					Rent and Office Supplies	13.55
2-21	2539	4488	Addressograph Co.	Changes on Plates	Rent and Office Supplies	3.07
2-21	2540	4489	Central Engraving Co.	Half-tones for Journal	Journal Ptg. & Eng.	53.33
2-21	2541	4490	Direct Advertising	C. W. A. Letter to Councilors	County Society Services	8.32
2-21	2542	4491	Koch Brothers	Office Supplies	Rent and Office Supplies	5.60
					Stationery and Printing	89.65
2-21	2546	4492	Wallace-Homestead Co.	Printing	Journal Ptg. & Eng.	631.58
					Reprints	85.90
2-27	2547	4493	R. N. Meng	Advertising Commission	Journal Ptg. & Eng.	30.00
3-8	2550	4496	Postmaster	Envelopes and Post Cards	Stationery and Printing	98.20
3-17	2557	4503	Thomas A. Burcham	Legislative Committee	Legislative Committee	300.00
Amount Forward						\$4,359.88

## Schedule No. 1—Continued

Date 1934	Check No.	Order No.	Drawn in Favor of	In Payment of	Distribution	Amount
				Amount Brought Forward.....		\$ 4,359.88
3-29	2558	4504	Iowa Press Clipping Service.....	February 1, 1934, Clippings.....	Journal Ptg. & Eng.....	11.47
3-29	2559	4505	Old Dutch Carbon and Ribbon Co.....	10,000 Second Sheets.....	Rent and Office Supplies.....	7.00
3-29	2560	4506	Bankers Building Corp.....	March, 1934, Rent.....	Rent and Office Supplies.....	95.00
					Administrative, Misc.....	2.50
					Rent and Office Supplies.....	10.50
3-29	2561	4507	N. W. Bell Telephone Co.....	Telephone, March, 1934.....	County Society Services.....	2.25
					Council.....	1.35
					Other Committees.....	3.15
					Speakers Bureau.....	2.75
3-29	2562	4508	Robert L. Parker.....	March, 1934, Salary.....	General Salaries.....	50.00
3-29	2563	4509	Grace J. McDonald.....	March, 1934, Salary.....	General Salaries.....	75.00
3-29	2564	4510	R. R. Simmons.....	March, 1934, Salary.....	Journal Ptg. & Eng.....	100.00
3-29	2565	4511	Dorothy Nelson.....	March, 1934, Salary.....	Speakers Bureau.....	150.00
3-29	2566	4512	Virginia Stewart.....	March, 1934, Salary.....	General Salaries.....	35.00
					Journal Ptg. & Eng.....	115.00
3-29	2567	4513	Dorothy McCarthy.....	March, 1934, Salary.....	General Salaries.....	200.00
3-29	2568	4514	James C. Donahue.....	Trav. Exp., Com. on Const. & By-L.....	Other Committees.....	10.00
3-29	2569	4515	R. M. Sorenson.....	Trav. Exp., Monroe Co. Com. Meeting.....	Other Committees.....	5.40
3-29	2570	4516	Channing G. Smith.....	Trav. Exp., Com. on Const. & By-L.....	Other Committees.....	2.00
3-29	2571	4517	Dorothy Nelson.....	Expenses P. G. Courses at Creston.....	Speakers Bureau.....	17.50
3-29	2572	4518	Dorothy McCarthy.....	Post Cards—6th District Meeting.....	County Society Services.....	3.71
3-29	2573	4519	John I. Marker.....	Trav. Exp., Trustee Meeting.....	Trustees.....	22.90
3-29	2574	4520	E. M. Myers.....	Trav. Exp., Trustee Meeting.....	Trustees.....	4.95
3-29	2575	4521	Chas. B. Taylor.....	Trav. Exp., Trustee Meeting.....	Trustees.....	9.25
3-29	2576	4522	W. F. Amdor.....	Trav. Exp., Com. on Superann. Phys.....	Other Committees.....	10.00
3-29	2577	4523	F. B. Murray.....	Trav. Exp., Com. on Superann. Phys.....	Other Committees.....	12.50
3-29	2578	4524	Robert L. Parker.....	Trav. Exp., N. W. Regional Conf.....	Administrative, Misc.....	37.50
				Trav. Exp., 2d, 6th & 11th Dist. Meet.....	County Society Services.....	31.00
				Trav. Exp., County Meetings.....	County Society Services.....	29.35
				Stationery for Council Secretary.....	Council.....	7.15
3-29	2580	4526	H. A. Spilman.....	Trav. Exp., County Meetings.....	Council.....	34.80
3-29	2581	4527	C. S. Cornell.....	Trav. Exp., N. W. Regional Conf.....	Med. Economics Com.....	16.60
3-29	2582	4528	C. W. Ellyson.....	Trav. Exp., Meeting at Grinnell.....	Council.....	7.75
3-29	2583	4529	W. S. Greenleaf.....	Exp., Com. on Superannuated Phys.....	Other Committees.....	12.10
3-29	2584	4530	Zaisers.....	Office Supplies.....	Rent and Office Supplies.....	2.20
3-29	2585	4531	R. N. Meng.....	Adv. Commissions.....	Journal Ptg. & Eng.....	53.10
3-29	2586	4532	Central Engraving Co.....	Halftones.....	Journal Ptg. & Eng.....	56.35
3-29	2587	4533	J. D. Boyd.....	Trav. Exp., Com. on Ch. Health & Pro.....	Other Committees.....	13.00
3-29	2588	4534	Koch Brothers.....	Office Supplies.....	Rent and Office Supplies.....	2.70
				Printing.....	Stationery and Printing.....	14.00
3-29	2589	4535	Wallace-Homestead Co.....	Printing Journal.....	Journal Ptg. & Eng.....	568.50
				Reprints.....	Reprints.....	112.51
3-29	2590	4536	Fred Moore.....	Dinners, Com. on Ch. Health & Pro.....	Other Committees.....	5.50
3-29	2591	4537	H. E. Farnsworth.....	Trav. Exp., Com. on Ch. Health & Pro.....	Other Committees.....	15.40
3-29	2592	4538	Cash.....	Petty Cash, Office Postage, Etc.....	Rent and Office Supplies.....	10.00
4-21	2608	4554	J. M. Houlette.....	Pictures.....	Journal Ptg. & Eng.....	1.50
4-21	2609	4555	Wallace-Homestead Co.....	5,000 Stamped Envelopes.....	Stationery and Printing.....	163.20
4-26	2610	4556	Iowa Press Clipping Bureau.....	March, 1934, Clippings.....	Journal Ptg. & Eng.....	13.87
	2611	4557	Void.....			
4-26	2612	4558	A. W. Erskine.....	Trav. Exp., Buchanan Co. Meeting.....	County Society Services.....	4.10
4-26	2613	4559	D. M. Electric Light Co.....	Bulbs for Office.....	Rent and Office Supplies.....	1.60
4-26	2614	4560	Bankers Building Corp.....	April, 1934, Rent.....	Rent and Office Supplies.....	95.00
4-26	2615	4561	M. C. Hennessy.....	Mimeograph, Teleph. Exp. Dist. Meet.....	Council.....	5.75
4-26	2616	4562	A. W. Bennett.....	Trav. Exp., Finance Com. Meeting.....	Other Committees.....	13.00
4-26	2617	4563	E. B. Williams.....	Trav. Exp., Finance Com. Meeting.....	Other Committees.....	9.00
4-26	2618	4564	E. C. McClure.....	Trav. Exp., Finance Com. Meeting.....	Other Committees.....	6.50
4-26	2619	4565	Robert L. Parker.....	Trav. Exp., Madison Co. Meeting.....	County Society Services.....	3.50
					Administrative, Misc.....	.85
					Rent and Office Supplies.....	10.73
					County Society Services.....	.75
4-26	2620	4566	N. W. Bell Telephone Co.....	April, 1934, Telephone Service.....	Med. Economics Com.....	.40
					Other Committees.....	2.65
					Speakers Bureau.....	3.50
					Council.....	1.45
4-26	2621	4567	Cash.....	Petty Cash, Office Postage, Etc.....	Rent and Office Supplies.....	10.00
4-26	2622	4568	Robert L. Parker.....	April, 1934, Salary.....	General Salaries.....	50.00
4-26	2623	4569	Grace J. McDonald.....	April, 1934, Salary.....	General Salaries.....	75.00
4-26	2624	4570	Gerald Blake.....	Attorney Fees, April, 1934.....	Legislative Committee.....	100.00
4-26	2625	4571	R. R. Simmons.....	April, 1934, Salary.....	Journal Ptg. & Eng.....	100.00
4-26	2626	4572	Dorothy Nelson.....	April, 1934, Salary.....	Speakers Bureau.....	150.00
					General Salaries.....	35.00
4-26	2627	4573	Virginia Stewart.....	April, 1934, Salary.....	Journal Ptg. & Eng.....	115.00
4-26	2628	4574	Dorothy McCarthy.....	April, 1934, Salary.....	General Salaries.....	200.00
4-26	2629	4575	Western Union.....	March and April Telegraph Services.....	Administrative, Misc.....	1.84
					Other Committees.....	.63
4-26	2630	4576	Addressograph Co.....	New Plates.....	Rent and Office Supplies.....	2.81
4-26	2631	4577	Zaisers.....	Office Supplies.....	Rent and Office Supplies.....	4.20
4-26	2632	4578	Central Engraving Co.....	Halftones for Journal.....	Annual Session.....	19.53
					Journal Ptg. & Eng.....	66.46
					Office Supplies.....	.20
4-26	2633	4579	Koch Brothers.....	Stationery.....	Stationery and Printing.....	24.00
4-26	2634	4580	R. N. Meng.....	Adv. Commissions.....	Journal Ptg. & Eng.....	46.35
4-26	2635	4581	Dutcher, Walker & Ries.....	Legal Services, 1st Quarter 1934.....	Medico-Legal.....	181.20
					Stationery and Printing.....	10.25
4-26	2636	4582	Wallace-Homestead Co.....	Printing Convention Blanks.....	Annual Session.....	2.00
				Journal Printing.....	Journal Ptg. & Eng.....	451.56
				Reprints.....	Reprints.....	127.69
4-26	2637	4583	Robert L. Parker.....	Trav. Exp., N. W. Iowa Med. Society.....	County Society Services.....	24.00
5-2	2649	4595	D. McCarthy.....	Postage on Handbooks.....	Annual Session.....	5.60
5-16	2650	4596	Caroline Bradbury.....	Services Selling Banquet Tickets.....	Annual Session.....	5.00
5-16	2651	4597	Robert McGrew.....	Music, Reception and Banquet.....	Annual Session.....	150.00
5-18	2652	4598	Chicago & N. W. Ry. Co.....	Trav. Exp., Guest Speakers.....	Annual Session.....	85.47
5-18	2653	4599	E. O. Baumgardner.....	Services as Nightwatchman.....	Annual Session.....	7.50
5-19	2654	4600	E. F. Biddle.....	Operator's Services.....	Annual Session.....	39.50
5-22	2655	4601	Freeman Decorating Co.....	Exhibit Booth, Setting and Sign Work.....	Annual Session.....	264.90

Amount Forward.....\$ 9,041.61



## Schedule No. 1—Continued

Date 1934	Check No.	Order No.	Drawn in Favor of	In Payment of	Distribution	Amount
				Amount Brought Forward.....		\$ 9,041.61
5-25	2656	4602	Wallace-Homestead Co.	1,500 Government Envelopes.....	Council .....	26.46
5-25	2657	4603	Iowa Press Clipping Bureau.....	April 1, 1934, Clippings.....	Journal Ptg. & Eng. ....	12.70
5-25	2658	4604	A. W. Erskine.....	Trav. Exp., Trip to Dubuque.....	County Society Services..	7.76
5-25	2659	4605	D. M. Clean Towel Service.....	Towel Service, Mar., Apr. & May, 1934..	Rent and Office Supplies..	3.75
5-25	2660	4606	Cash .....	Petty Cash, Office Postage, Etc.....	Rent and Office Supplies..	10.00
					Administrative, Misc. ....	.50
					Rent and Office Supplies..	10.89
5-25	2661	4607	N. W. Bell Telephone Co.....	May, 1934, Telephone Service.....	Council .....	2.55
					Other Committees .....	1.80
					Speakers Bureau .....	2.55
					County Society Services..	2.80
5-25	2662	4608	Bankers Building Corp.....	May, 1934, Rent.....	Rent and Office Supplies..	95.00
5-25	2663	4609	Robert L. Parker.....	May, 1934, Salary.....	General Salaries .....	50.00
5-25	2664	4610	Grace J. McDonald.....	May, 1934, Salary.....	General Salaries .....	75.00
5-25	2665	4611	R. R. Simmons.....	May, 1934, Salary.....	Journal Ptg. & Eng. ....	100.00
5-25	2666	4612	Gerald O. Blake.....	Retainer Fee, May, 1934.....	Legislative Committee ..	100.00
5-25	2667	4613	Dorothy Nelson .....	May, 1934, Salary.....	Speakers Bureau .....	150.00
					General Salaries .....	35.00
5-25	2668	4614	Virginia Stewart .....	May, 1934, Salary.....	Journal Ptg. & Eng. ....	115.00
5-25	2669	4615	Dorothy McCarthy .....	May, 1934, Salary.....	General Salaries .....	200.00
5-25	2670	4616	F. A. Hennessy.....	Council Telephone Calls, Mar. & Apr.....	Council .....	2.31
5-25	2671	4617	Iowa Auto Market.....	Rent of Loud Speaker, Annual Session..	Annual Session .....	30.00
5-25	2672	4618	C. A. Boice.....	8th District Council Exp.....	Council .....	26.15
5-25	2673	4619	Yellow Cab Co.....	Ambulance Exp., Annual Session.....	Annual Session .....	5.00
5-25	2674	4620	Western Union .....	April, 1934, Telegraph Expense.....	Administrative, Misc. ....	4.17
					Other Committees .....	1.26
5-25	2675	4621	Central Engraving Co.....	Halftones .....	Journal Ptg. & Eng. ....	62.10
5-25	2676	4622	John J. Shea.....	Traveling Expense .....	Annual Session .....	45.45
5-25	2677	4623	Direct Advertising .....	Basic Science Law Material.....	Legislative Committee ..	34.53
5-25	2678	4624	Koch Brothers .....	Office Supplies .....	Rent and Office Supplies..	6.86
					Printing and Stationery..	10.46
5-25	2679	4625	Wallace-Homestead Co. ....	Printing .....	Annual Session .....	5.36
					Journal Ptg. & Eng. ....	572.20
					Reprints .....	73.08
5-31	2687	4633	R. N. Meng.....	{ Services at annual session and com. on Hudson-Jones Exhibit.....	Annual Session .....	14.50
6-8	2688	4634	Master Reporting Co.....	Reporting Annual Session .....	Annual Session .....	433.60
6-8	2689	4635	Wallace-Homestead Co. ....	Printing .....	Annual Session .....	514.39
6-8	2690	4636	Des Moines Club.....	Secretaries' Luncheon .....	Annual Session .....	48.90
6-8	2691	4637	Dess Powers .....	Flowers, Annual Banquet.....	Annual Session .....	40.80
6-8	2692	4638	N. W. Bell Telephone Co.....	Telephone at Registration Desk.....	Annual Session .....	11.14
6-8	2693	4639	S. Joseph and Sons.....	Gavel for President.....	Annual Session .....	15.30
6-8	2694	4640	J. M. Houlette.....	Photograph of Exhibits.....	Annual Session .....	2.50
6-8	2695	4641	Haas Sign Shop.....	Conference Schedule, Sign.....	Annual Session .....	9.75
6-21	2696	4642	Hotel Fort Des Moines.....	Hotel Expense .....	Annual Session .....	564.87
6-20	2697	4643	Postmaster .....	Post Cards .....	Stationery and Printing..	5.00
6-25	2698	4644	Wallace-Homestead Co. ....	1,000 Stamped Government Envelopes..	Stationery and Printing..	32.64
6-27	2699	4645	Iowa Press Clipping Bureau.....	May Clippings .....	Journal Ptg. & Eng. ....	14.25
6-27	2700	4646	Cash .....	Petty Cash, Office Postage, Etc.....	Rent and Office Supplies..	10.00
					Administrative, Misc. ....	.40
					Rent and Office Supplies..	10.99
					Council .....	3.15
6-27	2701	4647	N. W. Bell Telephone Co.....	June, 1934, Telephone Service.....	Legislative Committee ..	2.65
					Other Committees .....	1.15
					Annual Session .....	.85
					Journal Ptg. & Eng. ....	1.30
					Speakers Bureau .....	2.10
6-27	2702	4648	Robert L. Parker.....	June, 1934, Salary.....	General Salaries .....	50.00
6-27	2703	4649	Grace J. McDonald.....	June, 1934, Salary.....	General Salaries .....	75.00
6-27	2704	4650	R. R. Simmons.....	June, 1934, Salary.....	Journal Ptg. & Eng. ....	100.00
6-27	2705	4651	Gerald O. Blake.....	June, 1934, Salary.....	Legislative Committee ..	100.00
6-27	2706	4652	Dorothy Nelson .....	June, 1934, Salary.....	Speakers Bureau .....	150.00
					General Salaries .....	35.00
6-27	2707	4653	Virginia Stewart .....	June, 1934, Salary.....	Journal Ptg. & Eng. ....	115.00
6-27	2708	4654	Dorothy McCarthy .....	June, 1934, Salary.....	General Salaries .....	200.00
6-27	2709	4655	Robert L. Parker.....	Trav. Exp., County Society Meeting.....	County Society Services..	29.00
6-27	2710	4656	Gordon F. Harkness.....	Trav. Exp., Trustee Meeting.....	Trustees .....	21.40
6-27	2711	4657	John I. Marker.....	Trav. Exp., Trustee Meeting.....	Trustees .....	21.40
6-27	2712	4658	E. M. Myers.....	Trav. Exp., Trustee Meeting.....	Trustees .....	4.70
6-27	2713	4659	Evon Walker .....	Trav. Exp., Meeting at Bloomfield.....	Legislative Committee ..	1.50
6-27	2714	4660	Robert L. Parker.....	Trav. Exp., American Med. Meeting.....	Administrative, Misc. ....	53.09
6-27	2715	4661	The French Way.....	Cleaning Drapes .....	Rent and Office Supplies..	6.00
6-27	2716	4662	Gordon F. Harkness.....	Miscellaneous President's Expense.....	Administrative, Misc. ....	22.47
6-27	2717	4663	H. A. Spilman.....	Travel and Telephone Expense.....	Council .....	50.45
6-27	2718	4664	Direct Advertising .....	Basic Science Law Reprints.....	Legislative Committee ..	28.05
6-27	2719	4665	Addressograph Co. ....	New Plates .....	Rent and Office Supplies..	2.78
6-27	2720	4666	Western Union .....	Telegraph Services, May, 1934.....	Annual Session .....	.76
					Speakers Bureau .....	.16
6-27	2721	4667	Zaisers .....	Office Supplies .....	Rent and Office Supplies..	17.14
6-27	2722	4668	Central Engraving Co.....	Halftones .....	Journal Ptg. & Eng. ....	41.27
6-27	2723	4669	T. F. Thornton.....	Delegates to A.M.A. Expense.....	Administrative, Misc. ....	38.84
6-27	2724	4670	Fred Moore .....	Delegate to A.M.A. Expense.....	Administrative, Misc. ....	41.83
					Council .....	4.25
6-27	2725	4671	Wallace-Homestead Co. ....	Printing .....	Journal Ptg. & Eng. ....	447.98
					Reprints .....	120.88
					Rent and Office Supplies..	5.56
6-27	2726	4672	Koch Brothers .....	Office Supplies .....	Council .....	4.73
					Administrative, Misc. ....	19.77
					Council .....	.50
6-27	2727	4673	Chas. B. Taylor.....	Miscellaneous President's Expense.....	Other Committees .....	20.90
					County Society Services..	65.70
					Trustees .....	.50
6-29	2729	4675	Bankers Building Corp.....	Rent, June, 1934.....	Rent and Office Supplies..	95.00
6-29	2730	4676	R. N. Meng.....	Adv. Commissions .....	Journal Ptg. & Eng. ....	4.80
7-16	2731	4677	Verne C. Hunt.....	Traveling Expenses .....	Annual Session .....	123.60
7-25	2732	4678	Iowa Press Clipping Bureau.....	June, 1934, Clippings.....	Journal Ptg. & Eng. ....	14.57

Amount Forward.....\$14,797.11

## Schedule No. 1—Continued

Date 1934	Check No.	Order No.	Drawn in Favor of	In Payment of	Distribution	Amount
				Amount Brought Forward.....		\$14,797.11
7-25	2733	4679	C. W. Ellyson.....	Expenses, Reinbeck Dist. Meeting.....	County Society Services...	15.73
7-25	2734	4680	Iowa-Des Moines National Bank.....	Safekeeping, 1-1-34 to 6-30-34.....	Administrative, Misc. ....	17.25
7-25	2735	4681	Cash .....	Petty Cash, Postage, Etc., for Office.....	Rent and Office Supplies..	10.00
7-25	2736	4682	Robert L. Parker.....	July, 1934, Salary.....	General Salaries .....	50.00
7-25	2737	4683	R. R. Simmons.....	July, 1934, Salary.....	Journal Ptg. & Eng.....	100.00
7-25	2738	4684	Gerald O. Blake.....	July, 1934, Salary.....	Legislative Committee .....	100.00
7-25	2739	4685	Grace J. McDonald.....	July, 1934, Salary.....	General Salaries .....	85.00
7-25	2740	4686	Dorothy Nelson .....	July, 1934, Salary.....	Speakers Bureau .....	150.00
7-25	2741	4687	Virginia Stewart .....	July, 1934, Salary.....	General Salaries .....	35.00
7-25	2742	4688	Dorothy McCarthy .....	July, 1934, Salary.....	Journal Ptg. & Eng.....	115.00
7-25	2743	4689	Vernon L. Treynor.....	Trav. Exp., Delegates to A.M.A.....	General Salaries .....	200.00
					Administrative, Misc. ....	26.82
					Administrative, Misc. ....	.83
					Rent and Office Supplies..	10.86
7-25	2744	4690	N. W. Bell Telephone Co.....	Telephone Service, July, 1934.....	County Society Services..	2.40
					Council .....	.75
					Legislative Committee .....	2.35
					Journal Ptg. & Eng.....	.30
					Speakers Bureau .....	2.00
7-25	2745	4691	Bankers Building Corp.....	July, 1934, Rent.....	Rent and Office Supplies..	95.00
7-25	2746	4692	Robert L. Parker.....	Trav. Exp. to Waterloo, Reinbeck and Okoboji .....	Legislative Committee .....	38.85
7-25	2747	4693	American Medical Association.....	250 Application Blanks.....	Rent and Office Supplies..	1.00
7-25	2748	4694	Multigraph Company .....	New Type, Ribbons, Etc.....	Rent and Office Supplies..	11.33
					Administrative, Misc. ....	.78
7-25	2749	4695	Western Union .....	Telegraph Service, June, 1934.....	Journal Ptg. & Eng.....	.54
					Speakers Bureau .....	.15
7-25	2750	4696	Zaisers .....	Office Supplies .....	Rent and Office Supplies..	10.45
7-25	2751	4697	Central Engraving Co.....	Halftones .....	Stationery and Printing....	24.99
					Journal Ptg. & Eng.....	80.43
					Stationery and Printing....	20.76
7-25	2752	4698	Wallace-Homestead Co. ....	Printing .....	Legislative Committee .....	26.52
					Journal Ptg. & Eng.....	473.04
					Reprints .....	11.35
7-25	2753	4699	Koch Brothers .....	Stationery and Office Supplies.....	Rent and Office Supplies..	16.02
					Council .....	129.52
7-30	2759	4706	Hopkins and Mulock, Inc.....	Premium on Bonds.....	Administrative, Misc. ....	87.50
8-16	2762	4700	Master Reporting Co.....	Reporting Annual Session.....	Annual Session .....	84.13
8-16	2763	4707	T. F. Thornton.....	Trav. Exp., Med. Econ. Committee.....	Med. Economics Com.....	13.15
8-16	2764	4708	Yellow Cab Company.....	Clinic Patients, Annual Session.....	Annual Session .....	1.30
8-17	2760	4709	Postmaster .....	Five Months of Journal Postage.....	Journal Ptg. & Eng.....	100.00
8-16	2761	4710	Bartlett Sign Company.....	Lettering on Door.....	Rent and Office Supplies..	4.65
8-20	2765	4711	White Line Transfer Co.....	Cartage of Office Equipment.....	Rent and Office Supplies..	18.00
8-28	2766	4712	Robert L. Parker.....	August, 1934, Salary.....	General Salaries .....	50.00
8-28	2767	4713	Grace J. McDonald.....	August, 1934, Salary.....	General Salaries .....	85.00
8-28	2768	4714	R. R. Simmons.....	August, 1934, Salary.....	Journal Ptg. & Eng.....	100.00
8-28	2769	4715	Gerald O. Blake.....	August, 1934, Salary.....	Legislative Committee .....	100.00
8-28	2770	4716	Dorothy Nelson .....	August, 1934, Salary.....	Speakers Bureau .....	150.00
8-28	2771	4717	Virginia Stewart .....	August, 1934, Salary.....	General Salaries .....	35.00
					Journal Ptg. & Eng.....	115.00
8-28	2772	4718	Dorothy McCarthy .....	August, 1934, Salary.....	General Salaries .....	200.00
8-28	2773	4719	Cash .....	Petty Cash, Office Postage, Etc.....	Rent and Office Supplies..	10.00
8-28	2774	4720	Iowa Press Clipping Bureau.....	July, 1934, Clippings.....	Journal Ptg. & Eng.....	17.02
8-28	2775	4721	Des Moines Clean Towel Service.....	Towel Service, June, July & Aug., 1934.....	Rent and Office Supplies..	3.75
					Administrative, Misc. ....	.05
					Rent and Office Supplies..	10.87
8-28	2776	4722	N. W. Bell Telephone Co.....	August, 1934, Telephone Service.....	County Society Services..	3.20
					Legislative Committee .....	.90
					Journal Ptg. & Eng.....	.85
					Speakers Bureau .....	3.95
8-28	2777	4723	Robert L. Parker.....	Trav. Exp. to McGregor.....	Legislative Committee .....	24.00
8-28	2778	4724	Donald C. Conzett.....	Trav. Exp. to Davenport, Program Com.....	Other Committees .....	19.47
8-28	2779	4725	L. C. Kern.....	Trav. Exp., Monroe Co. Com. Meeting.....	Other Committees .....	7.20
8-28	2780	4726	Bankers Building Corp.....	August, 1934, Rent.....	Rent and Office Supplies..	18.50
8-28	2781	4727	Davidsons .....	Cleaning and Laying Carpet.....	Rent and Office Supplies..	95.00
8-28	2782	4728	Thomas Electric Co.....	Repairing Fan .....	Rent and Office Supplies..	16.40
					Rent and Office Supplies..	1.50
8-28	2783	4729	Koch Brothers .....	Office Supplies and Stationery.....	Rent and Office Supplies..	3.32
8-28	2784	4730	Gordon F. Harkness.....	President's Miscellaneous Expense.....	Council .....	27.64
8-28	2785	4731	Central Engraving Co.....	Halftones .....	Administrative, Misc. ....	68.05
					Journal Ptg. & Eng.....	9.35
					Stationery and Printing....	13.57
8-28	2786	4732	Wallace-Homestead Co. ....	Printing .....	Legislative Committee .....	12.24
					Journal Ptg. & Eng.....	802.34
					Reprints .....	141.02
9-1	2787	4733	R. N. Meng.....	Advertising Commission .....	Journal Ptg. & Eng.....	12.00
9-6	2796	4742	Berkowitz Envelope Co.....	Journal Envelopes .....	Journal Ptg. & Eng.....	191.06
9-6	2797	4743	Fred Moore .....	Expenses, G. O. Blake.....	Legislative Committee .....	14.40
9-20	2799	4744	Cash .....	Postage .....	Legislative Committee .....	16.65
9-27	2800	4753	Iowa Press Clipping Bureau.....	August, 1934, Clippings.....	Journal Ptg. & Eng.....	17.65
9-27	2801	4754	Old Dutch Carbon & Ribbon Co.....	Last Dozen Ribbon Order.....	Rent and Office Supplies..	9.00
9-27	2802	4755	Des Moines Electric Co.....	Light Globes .....	Rent and Office Supplies..	1.54
					Rent and Office Supplies..	24.06
					Trustees .....	.30
9-27	2803	4756	N. W. Bell Telephone Co.....	September, 1934, Telephone Service.....	Council .....	2.20
					Legislative Committee .....	9.10
					Journal Ptg. & Eng.....	1.55
					Speakers Bureau .....	12.55
9-27	2804	4757	Cash .....	Petty Cash, Office Postage, Etc.....	Rent and Office Supplies..	10.00
9-27	2805	4758	Robert L. Parker.....	September, 1934, Salary.....	General Salaries .....	50.00
9-27	2806	4759	Grace J. McDonald.....	September, 1934, Salary.....	General Salaries .....	85.00
9-27	2807	4760	Gerald O. Blake.....	September, 1934, Salary.....	Medico-Legal Committee ..	100.00
9-27	2808	4761	R. R. Simmons.....	September, 1934, Salary.....	Journal Ptg. & Eng.....	100.00
9-27	2809	4762	Dorothy Nelson .....	September, 1934, Salary.....	Speakers Bureau .....	150.00
9-27	2810	4763	Virginia Stewart .....	September, 1934, Salary.....	General Salaries .....	35.00
					Journal Ptg. & Eng.....	115.00

Amount Forward.....\$20,073.11



## Schedule No. 1—Continued

Date 1934	Check No.	Order No.	Drawn in Favor of	In Payment of Amount Brought Forward	Distribution	Amount
						\$20,073.11
9-27	2811	4764	Dorothy McCarthy	September, 1934, Salary	General Salaries	200.00
9-27	2812	4765	Robert L. Parker	Trav. Exp., Second Dist. Meeting	County Society Services	12.00
9-27	2813	4766	R. N. Meng	Advertising Commissions	Journal Ptg. & Eng.	49.50
9-29	2821	4767	American Medical Association	Directory	Rent and Office Supplies	12.00
9-29	2822	4768	Zaisers	1 Walnut Desk and Chair, Office Sup.	Rent and Office Supplies	72.95
9-29	2823	4769	Western Union	Telegraph Service, July and August	{ Journal Ptg. & Eng.	.45
					{ Speakers Bureau	2.56
9-29	2824	4770	Addressograph Co.	Plates and Service	Rent and Office Supplies	4.34
9-29	2825	4771	Central Engraving Co.	Halftones	Journal Ptg. & Eng.	29.28
9-29	2826	4772	Koch Brothers	Office Supplies	Rent and Office Supplies	4.85
9-29	2827	4773	Wallace-Homestead Co.	Printing	{ Journal Ptg. & Eng.	460.10
					{ Reprints	24.22
9-29	2829	4774	Dutcher, Walker and Ries	2nd Quarter, Legal Expense	Medico-Legal Committee	424.52
9-29	2828	4775	Bankers Building Corp.	September, 1934, Rent	Rent and Office Supplies	90.00
9-29	2830	4776	A. E. Wanamaker	Trav. Exp., District Meeting	Legislative Committee	5.50
9-29	2831	4777	T. B. Lacey	Trav. Exp., District Meeting	Legislative Committee	2.00
					{ Council	10.95
					{ Legislative Committee	33.04
9-29	2832	4778	Gordon F. Harkness	President's Miscellaneous Expenses	{ Med. Economics Com.	1.55
					{ Other Committees	10.19
					{ Speakers Bureau	1.37
					{ County Society Services	14.45
9-29	2833	4779	L. R. Woodward	Council Expenses	Council	24.45
9-29	2834	4780	C. A. Boice	Trav. Exp., 8th District Conf.	Legislative Committee	33.95
10-9	2835	4781	Fred Moore	Legal Expenses	Legislative Committee	500.00
10-26	2836	4782	Iowa Press Clipping Bureau	September, 1934, Clippings	Journal Ptg. & Eng.	15.05
10-26	2837	4783	Cash	Petty Cash, Postage for Office	Rent and Office Supplies	10.00
10-26	2838	4784	Robert L. Parker	Salary, October, 1934	General Salaries	50.00
10-26	2839	4785	Grace J. McDonald	October, 1934, Salary	General Salaries	85.00
10-26	2840	4786	Gerald O. Blake	October, 1934, Salary	Legislative Committee	100.00
10-26	2841	4787	R. R. Simmons	October, 1934, Salary	Journal Ptg. & Eng.	100.00
					{ General Salaries	35.00
10-26	2842	4788	Virginia Stewart	October, 1934, Salary	{ Journal Ptg. & Eng.	115.00
10-26	2843	4789	Dorothy Nelson	October, 1934, Salary	Speakers Bureau	150.00
10-26	2844	4790	Dorothy McCarthy	October, 1934, Salary	General Salaries	200.00
					{ Rent and Office Supplies	14.85
10-26	2845	4791	N. W. Bell Telephone Co.	October, 1934, Telephone Services	{ Council	.75
					{ Legislative Committee	20.75
					{ Speakers Bureau	19.80
10-26	2846	4792	Bankers Building Corp.	October, 1934, Rent	Rent and Office Supplies	90.00
10-26	2847	4793	Gaar Brothers	Coupon Books for Stencils	Rent and Office Supplies	17.44
10-26	2848	4794	Dorothy McCarthy	Extra Month's Salary	General Salaries	200.00
10-26	2849	4795	Robert L. Parker	Trav. Exp., So. Iowa Society	County Society Services	17.30
10-29	2850	4796	John I. Marker	Trav. Exp., Trustee Meeting	Trustees	41.00
10-29	2851	4797	E. M. Myers	Trav. Exp., Trustee Meeting	Trustees	9.55
10-29	2852	4798	Evon Walker	Trav. Exp., Keokuk Co. Meeting	Legislative Committee	3.50
10-29	2853	4799	Harold A. Spilman	Trav. Exp., Council	{ Council	35.66
					{ Legislative Committee	10.00
					{ County Society Services	7.00
10-29	2854	4800	C. W. Ellyson	Councilor Expense	Council	14.25
					{ Legislative Committee	4.00
					{ Medico-Legal Committee	.63
10-29	2855	4801	Western Union	September, 1934, Telegraph Services	{ Legislative Committee	1.06
					{ Journal Ptg. & Eng.	1.24
					{ Speakers Bureau	.38
10-29	2856	4802	Smith & Smith Printing Co.	Envelopes	Rent and Office Supplies	7.19
10-29	2857	4803	Zaisers	Office Supplies	Rent and Office Supplies	24.44
10-29	2858	4804	Central Engraving Co.	Halftones	Journal Ptg. & Eng.	26.43
10-29	2859	4805	John C. Parsons	Trav. Exp., Prog. Com., Davenport	Other Committees	24.00
10-29	2860	4806	E. F. Biddle	Rent of Movie Mach. & Oper.' Serv.	Legislative Committee	3.00
10-29	2861	4807	R. N. Meng	Advertising Commissions	Journal Ptg. & Eng.	56.55
10-29	2862	4808	Direct Advertising	Legislative Committee Folders	Legislative Committee	20.80
10-29	2863	4809	L. R. Woodward	Trav. Exp., Council Meeting	Council	13.95
					{ Council	35.53
10-29	2864	4810	C. A. Boice	Councilor Expense	Legislative Committee	3.25
					{ County Society Services	45.60
10-29	2865	4811	Koch Brothers	Office Supplies	Rent and Office Supplies	16.68
10-29	2866	4812	Wallace-Homestead Co.	Printing	{ Legislative Committee	31.52
					{ Journal Ptg. & Eng.	439.73
					{ Reprints	67.53
					{ Administrative, Misc.	14.98
10-29	2867	4813	G. F. Harkness	President's Traveling and Misc.	{ Trustees	11.87
					{ Council	11.88
					{ Legislative Committee	3.63
					{ Other Committees	.87
10-31	2875	4821	E. M. Myers	Traveling and Misc. Expense	{ Trustees	1.34
					{ Speakers Bureau	2.60
11-15	2876	4822	Des Moines Club	Dinner, Cancer Committee	Administrative, Misc.	5.72
11-27	2877	4823	Iowa Press Clipping Bureau	October, 1934, Clippings	Journal Ptg. & Eng.	15.52
11-27	2878	4824	Polk County Medical Society	Taxi Coupon Books	Annual Session	3.60
11-27	2879	4825	Cash	Petty Cash, Office Postage, Etc.	Rent and Office Supplies	10.00
11-27	2880	4826	Robert L. Parker	November, 1934, Salary	General Salaries	50.00
11-27	2881	4827	Grace J. McDonald	November, 1934, Salary	General Salaries	85.00
11-27	2882	4828	Gerald O. Blake	November, 1934, Salary	Legislative Committee	100.00
11-27	2883	4829	R. R. Simmons	November, 1934, Salary	Journal Ptg. & Eng.	100.00
11-27	2884	4830	Mary McCord	November, 1934, Salary	Speakers Bureau	100.00
					{ General Salaries	35.00
11-27	2885	4831	Virginia Stewart	November, 1934, Salary	{ Journal Ptg. & Eng.	115.00
11-27	2886	4832	Dorothy Nelson	November, 1934, Salary	General Salaries	150.00
11-27	2887	4833	Bankers Building Corp.	November, 1934, Rent	Rent and Office Supplies	90.00
11-27	2888	4834	Gaar Brothers Typewriter Co.	One Automatic Duplicator	Speakers Bureau	102.00
11-27	2889	4835	Des Moines Clean Towel Service	Sept., Oct. and Nov. Towel Expense	Rent and Office Supplies	3.75

Amount Forward.....\$25,295.50

## Schedule No. 1—Continued

Date 1934	Check No.	Order No.	Drawn in Favor of	In Payment of Amount Brought Forward.....	Distribution	Amount
						\$25,295.50
					Administrative, Misc. ....	2.55
					Rent and Office Supplies ..	15.05
					Legislative Committee ....	37.59
11-27	2890	4836	N. W. Bell Telephone Co.....	November Telephone Service.....	Other Committees .....	8.60
					Journal Ptg. & Eng. ....	1.20
					Speakers Bureau .....	5.70
					County Society Services...	.60
11-27	2891	4837	Robert L. Parker.....	Trav. Exp., County Society Serv.....	County Society Services...	41.60
11-27	2892	4838	E. D. Plass.....	Trav. Exp., Child Health and Pro.....	Other Committees .....	12.00
11-27	2893	4839	Addressograph Co. ....	Changes on Plates.....	Rent and Office Supplies..	1.92
11-27	2894	4840	Treasurer, Iowa State College.....	Rental of Films.....	Legislative Committee ....	2.34
11-27	2895	4841	Hotel Fort Des Moines.....	Dinners, Child Health & Pro. Com.....	Other Committees .....	5.27
11-27	2896	4842	James E. Reeder.....	Trav. Exp., Council Meeting.....	Council .....	19.60
					Administrative, Misc. ....	1.81
11-27	2897	4843	Western Union .....	October, 1934, Telegraph Service.....	Legislative Committee ....	.33
					Speakers Bureau .....	.33
11-27	2898	4844	Central Engraving Co.....	Half-tones .....	Journal Ptg. & Eng. ....	113.74
11-27	2899	4845	Koch Brothers .....	Office Supplies .....	Rent and Office Supplies..	12.88
11-27	2900	4846	Dutcher, Walker & Ries.....	3rd Quarter, Medico-Legal Defense.....	Medico-Legal Committee ..	174.39
11-27	2901	4847	Gordon F. Harkness.....	Traveling Expenses .....	County Society Services...	18.95
11-27	2902	4848	State Printing Board.....	Brookings Institute Reports.....	Other Committees .....	20.25
					Legislative Committee ....	1.55
11-27	2903	4849	Wallace-Homestead Co. ....	Printing, October, 1934.....	Stationery and Printing..	36.21
					Journal Ptg. & Eng. ....	442.82
					Reprints .....	109.64
11-27	2904	4850	Mary McCord .....	Three Days' Salary, Oct., 1934.....	Speakers Bureau .....	12.00
11-28	2905	4851	Felix A. Hennessy.....	Telephone Calls .....	Council .....	13.50
12-15	2913	4867	Des Moines Club.....	Lunches, Members Economics Com.....	Med. Economics Com.....	7.09
12-19	2952	4868	E. J. Van Metre.....	Trav. Exp., Legislative Committee.....	Legislative Committee ....	4.00
12-19	2953	4869	E. S. Parker.....	Trav. Exp., Trip to Crawford Co.....	Legislative Committee ....	3.00
12-19	2954	4870	Geo. C. Albright.....	Trav. Exp., District Meeting.....	Legislative Committee ....	2.50
12-19	2955	4871	J. F. Aldrich.....	Trav. Exp., District Meeting.....	Legislative Committee ....	6.00
12-19	2956	4872	W. F. Amdor.....	Trav. Exp., District Meeting.....	Legislative Committee ....	8.60
12-19	2957	4873	R. L. Barnett.....	Trav. Exp., District Meeting.....	Legislative Committee ....	5.20
12-19	2958	4874	Wm. A. Bockoven.....	Trav. Exp., District Meeting.....	Legislative Committee ....	2.70
12-19	2959	4875	A. S. Bowers.....	Trav. Exp., District Meeting.....	Legislative Committee ....	6.75
12-19	2960	4876	H. L. Brereton.....	Trav. Exp., District Meeting.....	Legislative Committee ....	2.60
12-19	2961	4877	S. J. Brown.....	Trav. Exp., District Meeting.....	Legislative Committee ....	5.20
12-19	2962	4878	M. B. Call.....	Trav. Exp., District Meeting.....	Legislative Committee ....	3.50
12-19	2963	4879	J. Clark Cooper.....	Trav. Exp., District Meeting.....	Legislative Committee ....	6.60
12-19	2964	4880	H. P. Engle.....	Trav. Exp., District Meeting.....	Legislative Committee ....	4.80
12-19	2965	4881	A. F. Fritchen.....	Trav. Exp., District Meeting.....	Legislative Committee ....	4.00
12-19	2966	4882	M. B. Galloway.....	Trav. Exp., District Meeting.....	Legislative Committee ....	3.00
12-19	2967	4883	R. C. Gutch.....	Trav. Exp., District Meeting.....	Legislative Committee ....	5.55
12-19	2968	4884	W. H. Halloran.....	Trav. Exp., District Meeting.....	Legislative Committee ....	7.50
12-19	2969	4885	B. C. Hamilton.....	Trav. Exp., District Meeting.....	Legislative Committee ....	3.00
12-19	2970	4886	F. V. Hibbs.....	Trav. Exp., District Meeting.....	Legislative Committee ....	10.00
12-19	2971	4887	C. B. Hickenlooper.....	Trav. Exp., District Meeting.....	Legislative Committee ....	6.15
12-19	2972	4888	A. J. Joynt.....	Trav. Exp., District Meeting.....	Legislative Committee ....	4.00
12-19	2973	4889	E. C. Junger.....	Trav. Exp., District Meeting.....	Legislative Committee ....	6.00
12-19	2974	4890	Peirce Knott.....	Trav. Exp., District Meeting.....	Legislative Committee ....	6.00
12-19	2975	4891	R. T. Lenaghan.....	Trav. Exp., District Meeting.....	Legislative Committee ....	8.40
12-19	2976	4892	W. K. Long.....	Trav. Exp., District Meeting.....	Legislative Committee ....	3.00
12-19	2977	4893	J. F. Loosbrock.....	Trav. Exp., District Meeting.....	Legislative Committee ....	5.50
12-19	2978	4894	Thos. McMahon.....	Trav. Exp., District Meeting.....	Legislative Committee ....	4.50
12-19	2979	4895	T. A. Moran.....	Trav. Exp., District Meeting.....	Legislative Committee ....	4.00
12-19	2980	4896	E. S. Parker.....	Trav. Exp., District Meeting.....	Legislative Committee ....	6.20
12-19	2981	4897	W. T. Peters.....	Trav. Exp., District Meeting.....	Legislative Committee ....	5.20
12-19	2982	4898	T. M. Redmond.....	Trav. Exp., District Meeting.....	Legislative Committee ....	3.50
12-19	2983	4899	James E. Reeder.....	Trav. Exp., LeMars and Odebolt Meet.....	Legislative Committee ....	16.88
12-19	2984	4900	G. W. Rimel.....	Trav. Exp., District Meetings.....	Legislative Committee ....	5.60
12-19	2985	4901	Geo. C. Ryan.....	Trav. Exp., District Meetings.....	Legislative Committee ....	6.30
12-19	2986	4902	I. J. Sinn.....	Trav. Exp., District Meetings.....	Legislative Committee ....	5.40
12-19	2987	4903	C. J. Snitkay.....	Trav. Exp., District Meetings.....	Legislative Committee ....	2.10
12-19	2988	4904	John W. Thornton.....	Trav. Exp., District Meetings.....	Legislative Committee ....	7.30
12-19	2989	4905	P. W. Van Metre.....	Trav. Exp., District Meetings.....	Legislative Committee ....	7.00
12-19	2990	4906	E. J. Watson.....	Trav. Exp., District Meetings.....	Legislative Committee ....	4.00
12-19	2991	4907	S. S. Westly.....	Trav. Exp., District Meetings.....	Legislative Committee ....	1.00
12-19	2992	4908	Fred Moore .....	Traveling Expenses .....	Legislative Committee ....	229.50
12-19	2922	4913	Iowa Press Clipping Bureau.....	November, 1934, Clippings.....	Journal Ptg. & Eng. ....	13.22
					Administrative, Misc. ....	.40
					Rent and Office Supplies ..	14.95
					County Society Services...	.95
12-19	2923	4914	N. W. Bell Telephone Company.....	December, 1934, Telephone Service.....	Trustees .....	.40
					Council .....	.85
					Legislative Committee ....	18.80
					Other Committees .....	.85
					Speakers Bureau .....	24.95
12-19	2924	4915	Robert L. Parker.....	Expenses, Meeting at Pella, 12-7-34...	Legislative Committee ....	1.50
12-19	2925	4916	Cash .....	Office, Postage, Etc.....	Rent and Office Supplies..	10.00
12-19	2926	4917	Scott County Medical Society.....	Refund of Dues of Two Life Members.....	Administrative, Misc. ....	20.00
12-19	2927	4918	Robert L. Parker.....	December, 1934, Salary.....	General Salaries .....	50.00
12-19	2928	4919	Grace J. McDonald.....	December, 1934, Salary.....	General Salaries .....	85.00
12-19	2929	4920	Gerald O. Blake.....	December, 1934, Salary.....	Legislative Committee ....	100.00
12-19	2930	4921	R. R. Simmons.....	December, 1934, Salary.....	Journal Ptg. & Eng. ....	100.00
12-19	2931	4922	Mary McCord .....	December, 1934, Salary.....	Speakers Bureau .....	100.00
					General Salaries .....	35.00
12-19	2932	4923	Virginia Stewart .....	December, 1934, Salary.....	Journal Ptg. & Eng. ....	115.00
					General Salaries .....	150.00
12-19	2934	4925	F. P. Winkler.....	Trav. Exp., Council Meeting.....	Council .....	35.50
12-19	2935	4926	James C. Hill.....	Trav. Exp., Med. Economics Com.....	Med. Economics Com.....	6.60
12-19	2936	4927	J. C. Donahue.....	Trav. Exp., Med. Economics Com.....	Med. Economics Com.....	20.00
12-19	2937	4928	T. F. Thornton.....	Trav. Exp., Med. Economics Com.....	Med. Economics Com.....	15.50
12-19	2938	4929	John I. Marker.....	Traveling Exp., Trustees' Meeting.....	Trustees .....	36.80
12-19	2939	4930	E. M. Myers.....	Traveling Exp., Trustees' Meeting.....	Trustees .....	4.70
12-19	2940	4931	R. H. McBride.....	Trav. Exp., Com. on Child Health.....	Other Committees .....	20.00

Amount Forward.....\$27,838.01



## Schedule No. 1—Continued

Date 1934	Check No.	Order No.	Drawn in Favor of	In Payment of Amount Brought Forward.....	Distribution	Amount
12-19	2941	4932	James G. Macrae.....	Traveling Expenses .....	{ Council .....	7.50
12-19	2942	4933	E. L. Wurtzer.....	Traveling Expenses .....	{ Legislative Committee .....	5.80
12-19	2943	4934	H. A. Spilman.....	Council Expense, Traveling Exp.....	{ Council .....	12.50
12-19	2944	4935	R. D. Bernard.....	Traveling Expenses .....	{ Legislative Committee .....	13.17
12-19	2945	4936	Zaisers .....	Office Supplies .....	{ Rent and Office Supplies.....	209.40
12-19	2946	4937	John C. Parsons.....	Trav. Exp., Program Committee.....	{ Other Committees .....	6.33
					{ Administrative, Misc. ....	26.20
12-19	2947	4938	Gordon F. Harkness.....	Traveling Expenses .....	{ County Society Services.....	1.37
12-19	2948	4939	C. A. Boice.....	Trav. Exp., Councilor.....	{ Legislative Committee .....	12.85
12-19	2949	4940	Central Engraving Co.....	Halftones .....	{ Med. Economics Com.....	18.82
12-19	2950	4941	Wallace-Homestead Co. ....	Printing .....	{ Stationery and Printing.....	16.10
					{ Journal Ptg. & Eng.....	30.35
					{ Reprints .....	10.28
12-19	2951	4942	Koch Brothers .....	Office Supplies .....	{ Rent and Office Supplies.....	25.50
					{ Legislative Committee .....	563.47
					{ Speakers Bureau .....	47.68
12-19	2993	4943	H. J. McCoy.....	Treasurer's Salary, 1934-1935.....	{ General Salaries .....	8.85
12-19	2994	4944	H. E. Farnsworth.....	Trav. Exp., Com. on Child Health.....	{ Other Committees .....	8.67
12-19	2995	4946	T. F. Hersch.....	Expenses, Dinners, Cedar Rapids.....	{ Speakers Bureau .....	28.76
12-21	2996	4947	L. R. Woodward.....	Trav. Exp., Legislative Com.....	{ Legislative Committee .....	50.00
12-21	2997	4948	R. N. Meng.....	Advertising Commission .....	{ Other Committees .....	15.40
12-29	3012	4954	Bankers Building Corp.....	December, 1934, Rent.....	{ Legislative Committee .....	16.17
12-29	3013	4960	James E. Reeder.....	Trav. Exp., Pocahontas.....	{ Journal Ptg. & Eng.....	9.31
12-29	3014	4961	E. M. Myers.....	Trustees' Telephone Expense.....	{ Rent and Office Supplies.....	15.30
12-29	3015	4962	F. P. Winkler.....	Trav. Exp., Interprofessional.....	{ Legislative Committee .....	90.00
12-29	3016	4963	C. W. Ellyson.....	Trav. Exp., Marshalltown.....	{ Trustees .....	11.00
12-29	3017	4964	Gaar Brothers .....	Stencils and Ink.....	{ Legislative Committee .....	2.55
12-29	3018	4965	Chicago N. W. R. R. Co.....	Five Tickets to Cedar Rapids, Ia.....	{ Council .....	10.50
12-29	3019	4966	C. W. Ellvson.....	Council Telephone Calls.....	{ Rent and Office Supplies.....	9.67
12-31	3020	4967	Dean C. E. Friley.....	Trav. Exp., Cedar Rap. Legis. Conf.....	{ Legislative Committee .....	12.24
12-31	3021	4968	Frank A. Hennessy.....	Trav. Exp., Charles City, Ia., Meeting.....	{ Legislative Committee .....	21.30
12-31	3022	4969	Gerald O. Blake.....	Trav. Exp., Cedar Rap. Legis. Conf.....	{ Council .....	6.79
12-31	3023	4970	Mrs. Peter A. Bendixen.....	Trav. Exp., Legislative.....	{ Legislative Committee .....	4.80
12-31	3024	4971	Addressograph Co. ....	One New Addressograph, \$367.00, Less Old Addressograph Allowance, \$15.00. Rent and Office Supplies..	{ Legislative Committee .....	12.16
						3.40
						16.40
						352.00

TOTAL EXPENDITURES FOR THE YEAR 1934 (See Exhibit "A" and "B").....\$29,550.60

Schedule No. 2  
EXPENDITURES—SPEAKERS BUREAU  
For the Year Ended December 31, 1934

Date 1934	Check No.	Order No.	Drawn in Favor of	In Payment of	Distribution	Amount
1-26	2506	4455	Postmaster .....	Postage .....	{ Miscellaneous .....	\$ 10.26
2-20	2509	4458	John C. Parsons, M.D.....	Traveling Expenses .....	{ Travel Expense .....	7.50
2-20	2510	4459	Frank A. Ely, M.D.....	Traveling Expenses .....	{ Travel Expense .....	8.40
2-20	2511	4460	Chicago, B. & Q.....	Traveling Exp., Post Grad. Courses.....	{ Post Graduate Courses.....	20.74
2-20	2512	4461	Ray Rich .....	Radio Talks .....	{ Radio Talks .....	5.00
2-20	2513	4462	A. D. Woods, M.D.....	Traveling Expenses .....	{ Travel Expense .....	9.50
2-20	2514	4463	E. D. Plass, M.D.....	Traveling Expenses .....	{ Travel Expense .....	6.60
2-20	2515	4464	D. J. Glomset, M.D.....	Traveling Expenses .....	{ Travel Expense .....	48.00
2-20	2516	4465	M. E. Barnes, M.D.....	Traveling Exp. and Radio.....	{ Travel Expense .....	7.30
2-20	2517	4466	Carl R. Moore, M.D.....	Traveling Exp., Post Grad. Courses.....	{ Radio Talks .....	5.00
2-20	2518	4467	James E. Dyson, M.D.....	Traveling Expenses .....	{ Post Graduate Courses.....	10.00
2-20	2519	4468	E. E. Shaw, M.D.....	Traveling Expenses .....	{ Travel Expense .....	5.20
2-28	2548	4494	Rock Island Lines.....	Traveling Exp., Post Grad. Courses.....	{ Travel Expense .....	17.00
2-28	2549	4495	Paul Cannon, M.D.....	Expenses, Post Graduate Courses.....	{ Post Graduate Courses.....	19.35
3-10	2551	4497	Donald C. Konzett, M.D.....	Traveling Expenses .....	{ Post Graduate Courses.....	5.00
3-10	2552	4498	Burlington Lines .....	Traveling Exp., Post Grad. Courses.....	{ Travel Expense .....	9.00
3-10	2553	4499	M. E. Barnes, M.D.....	Traveling Exp., Post Grad. Courses.....	{ Post Graduate Courses.....	20.74
					{ Travel Expense .....	5.20
3-10	2554	4500	John C. Parsons, M.D.....	Traveling Exp., Post Grad. Courses.....	{ Printing and Stationery.....	3.13
					{ Post Graduate Courses.....	3.14
					{ Office Supplies .....	2.90
3-10	2555	4501	D. J. Glomset, M.D.....	Expenses, Post Grad. Courses & Misc.....	{ Miscellaneous .....	8.40
3-10	2556	4502	Des Moines Slide Co.....	Post. Grad. Courses, Slides and Stereopticon Rental .....	{ Post Graduate Courses.....	.75
3-31	2593	4539	Fred M. Smith, M.D.....	Traveling Exp., Post Grad. Courses.....	{ Post Graduate Courses.....	8.45
3-30	2594	4540	Julius Weingart, M. D.....	Traveling Exp., Post Grad. Courses.....	{ Post Graduate Courses.....	5.60
3-30	2595	4541	C. Van Epps, M.D.....	Traveling Exp., Post Grad. Courses.....	{ Post Graduate Courses.....	26.70
3-30	2596	4542	P. C. Jeans, M.D.....	Traveling Exp., Post Grad. Courses.....	{ Post Graduate Courses.....	16.63
3-31	2597	4543	J. F. Edwards, M.D.....	Traveling Exp., Post Grad. Courses.....	{ Post Graduate Courses.....	8.00
3-31	2598	4544	J. D. Hill, M.D.....	Traveling Exp., Post Grad. Courses.....	{ Travel Expense .....	9.20
3-31	2599	4545	Des Moines Slide Co.....	Stereopticon rental, Post. Grad. Courses.....	{ Travel Expense .....	5.60
3-31	2600	4546	C. J. Barborka, M.D.....	Traveling Expenses .....	{ Travel Expense .....	2.00
3-31	2601	4547	Samuel M. Feinberg, M.D.....	Traveling Expenses .....	{ Post Graduate Courses.....	5.00
3-31	2602	4548	Geo. W. Hall, M.D.....	Traveling Expenses .....	{ Post Graduate Courses.....	5.00
3-31	2606	4549	Frye Manufacturing Co.....	Office Supplies .....	{ Post Graduate Courses.....	25.00
					{ Office Supplies .....	4.50
					{ Miscellaneous .....	2.15
3-31	2603	4550	John C. Parsons, M.D.....	Traveling Exp., Post Grad. Courses.....	{ Printing and Stationery.....	3.00
					{ Post Graduate Courses.....	2.50
					{ Office Supplies .....	.25

Amount Forward.....\$ 392.69

## Schedule No. 2—Continued

Date 1934	Check No.	Order No.	Drawn in Favor of	In Payment of Amount Brought Forward	Distribution	Amount
3-31	2604	4551	D. J. Glomset, M.D.	Traveling Expenses	Traveling Expense	\$ 392.69
3-31	2605	4552	Ralph H. Parker, M.D.	Traveling Expenses	Traveling Expense	8.20
4-17	2607	4553	Eleanora Liljegren	Traveling Expenses	Traveling Expense	8.20
4-27	2638	4584	Hotel Lowry	Traveling Expenses	Traveling Expense	7.50
4-27	2639	4585	A. L. Tatum, M.D.	Traveling Expenses	Traveling Expense	7.95
4-27	2640	4586	H. W. Rathe, M.D.	Traveling Expenses	Post Graduate Courses	32.00
4-27	2641	4587	A. P. Stoner, M.D.	Traveling Exp., Radio Talks	Post Graduate Courses	17.50
4-27	2642	4588	Andrew H. Woods, M.D.	Traveling Exp., Post Grad. Courses	Radio Talks	3.00
4-27	2643	4589	Wm. Malamud, M.D.	Traveling Exp., Post Grad. Courses	Post Graduate Courses	17.60
4-27	2644	4590	Dennis H. Kelly, M.D.	Traveling Exp., Post Grad. Courses	Post Graduate Courses	9.00
4-27	2645	4591	Des Moines Slide Co.	Stereopticon Rental, P. Grad. Courses	Travel Expense	17.20
4-27	2646	4592	D. M. Nelson	Traveling Exp., Post Grad. Courses	Post Graduate Courses	13.50
4-27	2647	4593	D. J. Glomset, M.D.	Traveling Exp., Post Grad. Courses	Post Graduate Courses	2.50
4-27	2648	4594	Harold J. McCoy, M.D.	Traveling Exp., Radio Talks	Post Graduate Courses	9.00
5-26	2680	4626	Dean W. J. Teeters	Traveling Expenses	Radio Talks	22.00
5-26	2681	4627	Leo J. Rigler, M.D.	Traveling Exp., Post Grad. Courses	Travel Expense	3.00
5-26	2682	4628	John C. Parsons, M.D.	Traveling Exp., Post Grad. Courses	Post Graduate Courses	14.00
5-26	2683	4629	Tom B. Throckmorton, M.D.	Traveling Exp., Post Grad. Courses	Printing and Stationery	24.50
5-26	2684	4630	M. E. Barnes, M.D.	Radio Talk	Post Graduate Courses	3.09
5-26	2685	4631	R. A. Stewart, M.D.	Traveling Exp., Post Grad. Courses	Post Graduate Courses	5.40
5-26	2686	4632	Women's Auxilliary	Health Essay Contest	Radio Talks	8.24
6-27	2728	4674	Ray Rich	Radio Talk	Radio Talks	5.00
7-27	2754	4701	M. E. Barnes, M.D.	Traveling Exp. and Radio Talks	Travel Expense	10.50
7-27	2755	4702	C. W. Baldrige, M.D.	Traveling Exp., Post Grad. Courses	Radio Talks	5.00
7-27	2756	4703	Ivan T. Schultz, M.D.	Traveling Expenses	Post Graduate Courses	6.00
7-27	2757	4704	R. A. Stewart, M.D.	Radio Talks	Travel Expense	3.80
7-27	2758	4705	Frye Manufacturing Co.	Office Supplies	Travel Expense	7.00
9-6	2788	4734	Felix A. Hennessy, M.D.	Tr. Exp., Speakers Bureau Com. Meet.	Office Supplies	5.10
9-6	2789	4735	H. L. Brereton, M.D.	Tr. Exp., Speakers Bureau Com. Meet.	Travel Expense	20.00
9-6	2790	4736	L. C. Kern, M.D.	Tr. Exp., Speakers Bureau Com. Meet.	Travel Expense	16.00
9-6	2791	4737	M. E. Barnes, M.D.	Traveling Exp. and Radio Talks	Travel Expense	14.50
9-6	2792	4738	J. F. Gerken, M.D.	Traveling Expenses	Radio Talks	12.20
9-6	2793	4739	Ray Rich	Radio Talks	Travel Expense	5.00
9-6	2794	4740	D. J. Glomset, M.D.	Trav. Exp., Speakers Bureau	Radio Talks	5.00
9-6	2795	4741	C. A. Boice, M.D.	Committee Meeting and Post Cards	Travel Expense	1.50
9-20	2798	4745	Gail A. McClure, M.D.	Traveling Expenses	Printing and Stationery	10.00
9-28	2814	4746	E. M. MacEwen, M.D.	Traveling Exp., Post Grad. Courses	Travel Expense	16.00
9-28	2815	4747	D. J. Glomset, M.D.	Trav. Exp. and Office Supplies	Radio Talks	5.00
9-28	2816	4748	John Henkin, M.D.	Traveling Expenses	Travel Expense	14.50
9-28	2817	4749	M. B. Call, M.D.	Traveling Expenses	Printing and Stationery	7.00
9-28	2818	4750	Ray Fox, M.D.	Traveling Expenses	Travel Expense	25.00
9-28	2819	4751	D. M. Nelson	Traveling Expenses	Travel Expense	2.50
9-28	2820	4752	C. C. Walker, M.D.	Traveling Expenses	Travel Expense	7.00
10-29	2868	4814	R. A. Stewart, M.D.	Traveling Expenses	Travel Expense	17.50
10-29	2869	4815	W. W. Bowen, M.D.	Traveling Exp., Radio Talk	Radio Talks	6.00
10-29	2870	4816	Peirce D. Knott, M.D.	Traveling Expenses	Travel Expense	7.50
10-29	2871	4817	D. J. Glomset, M.D.	Traveling Expenses	Travel Expense	30.00
10-29	2872	4818	E. L. Wutzler, M.D.	Traveling Expenses	Travel Expense	5.20
10-29	2873	4819	E. M. MacEwen, M.D.	Traveling Expenses	Post Graduate Courses	16.30
10-27	2874	4820	M. E. Barnes, M.D.	Radio Talks	Radio Talks	5.00
11-27	2906	4852	D. J. Glomset, M.D.	Traveling Expenses	Travel Expense	20.80
11-28	2907	4853	E. D. Plass, M.D.	Traveling Expenses	Travel Expense	13.25
11-28	2908	4854	Harry C. Payne, M.D.	Traveling Expenses	Travel Expense	6.00
11-28	2909	4855	E. M. MacEwen, M.D.	Traveling Expenses	Post Graduate Courses	16.30
11-28	2910	4856	Mary L. McCord	Traveling Expenses	Travel Expense	1.70
11-28	2911	4857	Petty Cash	Miscellaneous Postage	Office Supplies	10.00
12-1	2912	4858	Ray Rich	Radio Talks	Radio Talks	5.25
12-17	2914	4859	M. E. Barnes, M.D.	Traveling Expenses	Travel Expense	5.90
12-17	2915	4860	Mrs. D. J. Glomset	Traveling Expenses	Travel Expense	7.00
12-17	2916	4861	D. J. Glomset, M.D.	Traveling Expenses	Travel Expense	25.00
12-17	2917	4862	Ivan T. Schultz, M.D.	Post Graduate Courses Expenses	Post Graduate Courses	13.85
12-17	2918	4863	John C. Parsons, M.D.	Traveling Expenses	Travel Expense	10.56
12-17	2919	4864	Dess Powers	Misc., Flowers for Baldrige	Miscellaneous	10.95
12-17	2920	4865	Des Moines Slide Co.	Trav. Exp., Lantern Slides	Travel Expense	15.20
12-17	2921	4866	J. E. Dyson, M.D.	Traveling Expenses	Travel Expense	6.00
12-24	2998	4909	John H. Henkin, M.D.	Traveling Expenses	Travel Expense	21.00
12-24	2999	4910	E. M. Myers, M.D.	Traveling Expenses	Travel Expense	2.35
12-24	3000	4911	E. M. Myers, M.D.	Traveling Expenses	Travel Expense	1.05
12-24	3000	4912	E. L. Wurtzer, M.D.	Traveling Expenses	Travel Expense	6.50
12-24	3001	4945	S. D. Maiden, M.D.	Traveling Expenses	Travel Expense	14.75
12-24	3007	4949	Des Moines Slide Co.	Misc. Stereopticon Rental	Travel Expense	2.50
12-24	3008	4950	Iowa Union Dining Service	Director's Dinners, Post Grad. Courses	Miscellaneous Expense	22.07
12-29	3009	4951	Julien Dubuque Hotel	Hotel Exp., Post Grad. Courses	Post Graduate Courses	79.70
12-29	3010	4952	H. A. Tolliver, M.D.	Traveling Expenses	Travel Expense	7.20
12-29	3011	4953	State University of Iowa	Traveling Expenses	Post Graduate Courses	971.03
12-24	3002	4955	D. J. Glomset, M.D.	Traveling Expenses	Travel Expense	3.91
12-24	3003	4956	S. D. Maiden, M.D.	Traveling Expenses	Travel Expense	19.95
12-24	3004	4957	F. P. McNamara, M.D.	Expenses, Post Grad. Courses	Post Graduate Courses	6.14
12-24	3005	4958	Marv L. McCord	Traveling Expenses	Travel Expense	12.50
12-24	3006	4959	H. L. Brereton, M.D.	Traveling Expenses	Travel Expense	7.50

TOTAL EXPENDITURES FOR THE YEAR 1934 (SPEAKERS BUREAU) See Exhibits "A" and "B"....\$ 2,352.68



Treasurer McCoy: On page 9 of the handbook you will find the report, along with the auditor's report. I move its approval.

*The motion was regularly seconded.*

President Harkness: It has been moved and seconded that the treasurer's report as published in the handbook receive the approval of this body.

*The question was called for, put to a vote and carried.*

President Harkness: We will now have the report of the Council. Dr. Spilman.

## REPORT OF THE CHAIRMAN OF THE COUNCIL

House of Delegates, Iowa State Medical Society:

Chaotic economic conditions, social and industrial unrest, legislative experimentation and an all too rapidly growing relief roll continue to create new problems which directly and indirectly affect the practitioner of medicine. The Council has tried to keep in touch with changing conditions; it has held two meetings with the Board of Trustees; it has advised with the Professional Relations and Public Relations Committees; and it has been consulted by and advised with the Medical Economics Committee, the Legislative Committee and the Speakers Bureau Committee. Mr. Mulock, State Director of Federal Emergency Relief, was present at the two joint meetings of the Trustees and Council to explain the status of federal funds as related to medical relief in Iowa. Dr. Miller, Regional Director of the Federal Emergency Relief Administration, appeared at the January meeting and explained the regulations which would probably govern the doctors should federal funds become available for medical relief in our state.

At the request of Dr. T. C. Denny, medical director of the State Emergency Relief Administration, a special meeting of the Council was held in Des Moines February 9, 1935, to confer with him concerning a uniform plan of operation for the use of federal funds for medical relief, should such funds be made available.

Harold A. Spilman, Chairman

## REPORTS FROM COUNCILOR DISTRICTS

### First Councilor District

All counties in the first district are organized and seem to be alert to the interests of organized medicine, in these trying times. Scientific programs have been held quite generally throughout the district, and while some counties may appear less active than others, the men from those counties have been in frequent attendance at meetings held elsewhere. All things considered, the district appears to be in a healthy and harmonious condition.

Below are given the reports from each county in the first district.

Felix A. Hennessy, Councilor

Allamakee County. Membership in the Allamakee County Medical Society has been small, only five doctors in the county paying dues in 1934. Two meetings were held late in the summer for the discussion of county medical work, etc. A meeting of the society was held in Postville about the last of January for general discussion, election of officers, etc. The 1934 officers were all re-elected for 1935. The deputy councilor has had the privilege of attending the postgraduate course lectures on anatomy that have been given during the fall and winter at New Hampton.

John W. Thornton, Deputy Councilor

Bremer County. At the regular meeting of the Society on May 14, 1934, Dr. L. C. Kern of Waverly reported on the proceedings of the House of Delegates of the State Medical Society at the annual meeting.

The 1934 annual meeting and election of officers of the society was held at Mercy Hospital, Waverly, on December 13, following a turkey dinner served by the Sisters. There were 35 guests at the dinner which was followed by short talks by Dr. Jay and Father Collins. The scientific program consisted of an illustrated lecture on "Some Problems in X-Ray Diagnosis" by Dr. Nelson L. Hersey of Independence, and "The Effect of Maternal Physical Development on Labor" by Dr. Paul J. Amlie of Tripoli. In the business meeting, legislative matters were considered and favorable action was taken regarding the matter of appointing a committee to cooperate with the Committee on Child Health and Protection of the State Society.

There was a called meeting of the society on February 1, 1935, to discuss the matter of contracts between the relief administration and the medical society for the care of the indigent. It was decided to present the state medical fee bill to the county supervisors with the agreement that we accept 25 per cent reduction on medical work and 50 per cent reduction on surgical work, obstetrical cases to be classed as surgical. The three members of the county supervisors were present and explained the set-up of the relief office more or less in detail. The fee bill with the agreement was presented to them. They agreed to take the matter under advisement and report the outcome to the society later. The President of the society appointed a committee of three physicians—Dr. Jay, Dr. Graening and Dr. Sparks—to act as a board of censors to pass on all bills rendered under this agreement.

F. R. Sparks, Deputy Councilor

Chickasaw County. The following is a report of the activities of the Chickasaw County Medical Society for 1934. On February 2, 1934, we had an election of officers. All officers were re-elected. Dr. Erwin von Graff of Iowa City gave an illustrated talk on "The Dangers of Stump Cancer After Subtotal Hysterectomy."

December 27, 1934. At this meeting the Basic Science Law was explained by Dr. F. P. McNamara of Dubuque. Invitations were extended to our Sen-

ator and Representative and to the nurses, druggists, dentists and veterinarians of the county. Election of officers for 1935 took place at this meeting.

Paul E. Gardner, Deputy Councilor

Clayton County. There were not many activities of the Clayton County Medical Society the past year, except the annual meeting held in December. A local attorney and an outside speaker addressed the meeting relative to the Basic Science Bill. There was considerable work done on this measure by a few individual members of the society.

The trouble with our society for a great many years has been the lack of willingness of the members to appear on a program of any kind. We could not get even two doctors to appear in a neighboring county on an exchange program for the coming year. The only solution of this problem seems to be the holding of group meetings of three or four counties in order to stimulate some degree of interest and attendance in the backward counties.

Several doctors from this county attended the postgraduate course given at Dubuque last fall.

In August a district meeting was held at McGregor—the annual district “play day.” It combined both an educational program and a day of fun and relaxation. Doctors and their wives from all parts of the district and several of the state society officers attended this interesting meeting.

J. W. Hudek, Deputy Councilor

Fayette County. The Fayette County Medical Society held six meetings during 1934. On March 15 and April 11 called business meetings were held. On April 11, the county society met with the Board of Supervisors to discuss matters pertaining to the medical care of the indigent. Regular meetings with scientific programs were held on September 17, October 2, and November 26. At this last meeting there was a clinic in addition to the rest of the program.

C. C. Hall, Deputy Councilor

Floyd County. All eligible physicians in Floyd County are active members of the county society. The medical care of the county poor is handled on a percentage basis of the regular fee schedule. Regular monthly scientific meetings are well attended and are held the fourth Tuesday of each month at the Cedar Valley Hospital in Charles City. The society is functioning smoothly.

Ray A. Fox, Deputy Councilor

Howard County. Our society met on January 3, 1935, and the following business was transacted. Membership records were adjusted and membership dues paid. The question of medical fees for relief cases was discussed and a schedule adopted. The officers for the year 1935 were elected. Our woman's auxiliary was not active in 1934.

Wm. A. Bockoven, Deputy Councilor

Mitchell County. The following is a brief report of the activities of the Mitchell County Medical Society for the past ten months:

The society has convened five times during this period, with an average attendance of seven members.

Information concerning tuberculin testing in the high schools was received from the Iowa Tuberculosis Association and it was decided to present this information to the various school boards and allow them to request the examination if they so desired.

The American Legion at Osage contemplated a county wide diphtheria inoculation program, with which the society was in harmony. A fee of \$.50 for each person inoculated who was able to pay, and one of \$.25 each for indigents was agreed upon as a nominal charge. The fees for the indigent were to be paid by the Legion.

The contract between the society and the county for medical care of the indigent was retained for another year.

During the January meeting, officers were elected to serve for 1935. At this meeting a committee composed of Dr. Krepelka, Dr. Whitley and Dr. T. S. Walker, was appointed to answer local inquiries concerning child welfare and community health projects.

The kind invitation of the Butler County Medical Society for our society to put on a program for them in April was accepted.

Letters to our senator and representative, urging them to back the Basic Science Bill were drawn up and signed by the members of the society.

T. S. Walker, Deputy Councilor

Winneshiek County. The affairs of the Winneshiek County Medical Society have been running along in a normal fashion, with regular meetings being held. A keen interest in legislative matters has been manifested, much of which has been enlivened by our councilor. The physicians of this county are keenly anxious that the Basic Science Bill be passed and are appreciative of the leadership demonstrated by the Legislative Committee, headed by Dr. Fred Moore of Des Moines.

Our Interprofessional Society has been active and highly beneficial. It includes physicians and surgeons, dentists, veterinarians, pharmacists, registered nurses, and two professors of Luther College, who are on the faculty of the biology department. Meetings are held every three months, with a banquet and an able and outstanding speaker.

There has been a splendid relationship between the physicians of our society and the Linne Society at Luther College. This society is composed principally of premedic and science students. They have had excellent programs during the past year, with such speakers as Drs. Adson and Alvarez of the Mayo Clinic and Drs. Gunder and L. Gunderson of the Gunderson Clinic at La Crosse, Wisconsin. The members of the Interprofessional Society have always been invited and there is a splendid attendance.

A. F. Fritchen, Deputy Councilor

## Second Councilor District

Two activities seem to be outstanding in the second district this year. The first is the interest in postgraduate work. A postgraduate course was held in Humboldt in the fall and was attended by approxi-



mately fifty doctors. This seems like an outstanding piece of work for a county society recently re-organized, to show enough interest to have a postgraduate course given in the county. The other postgraduate course is one that is just being started in Hampton.

The other outstanding interest in the district is that shown in support of the Basic Science Law. I think every deputy councilor cooperated to the fullest extent, began working in the summer and by October were very actively at work. Something of the effectiveness of this, I think, is to be gathered from the fact that every representative from this district voted favorably on the Basic Science bill.

Two county societies, Kossuth and Cerro Gordo, had interprofessional meetings during the winter. At both of these a very active interest was evident. Several of the counties in this district have participated in the county exchange programs. This seems to be a very definitely beneficial type of meeting.

There has been improvement in all the counties in care of the indigent. I think all counties now have satisfactory contracts which pay approximately half the minimum fee bill of the State Society. Cerro Gordo county this year succeeded in getting such a contract. Franklin county, beginning the first of April, will be under the new federal relief set up.

Cerro Gordo county started in on a county diphtheria immunization program, but it is not entirely completed. Worth county put their immunization program over 100 per cent. Cerro Gordo and Hancock counties have completed rather extensive tuberculosis surveys. The Cerro Gordo County Medical Society has been using the funds from the county contract to advance scientific work. They have had very interesting programs, using well known speakers, and in addition, they have initiated the bulletin, the *North Iowa Medical News*.

L. R. Woodward, Councilor

#### Third Councilor District

There has been an increased interest by the doctors in the third district during the past year. This interest was manifested by more regular meetings of the various county societies, an increase in membership over the previous year and better scientific programs.

The Upper Des Moines District Society had two meetings during the year, one at the Inn on Lake Okoboji in June, at which time President Harkness of the State Society was present and gave a splendid address. Several very good scientific papers were presented and a splendid social program and banquet was sponsored by the Woman's Auxiliaries in that district. Sixty-two doctors attended the meeting.

The Northwest Iowa District Society had two meetings at Sheldon. These meetings also were much better attended than usual. Good programs were presented.

Dickinson, Emmet and Pocahontas counties organized interprofessional health units. O'Brien and

Sioux counties had already organized the previous year, making a total of five counties who have perfected interprofessional health organizations in the third district.

The Speakers Bureau sponsored and promoted a very good program on the various phases of the subject of the Socialization of Medicine. This meeting was held at the Tangney Hotel, Spencer, October 27. Fifty-eight doctors were registered. The program was preceded by a delicious banquet.

Great interest in the Basic Science Bill has been manifested by the members in the third district. I am sure the Legislative Committee will credit this district with having given fine cooperation throughout the campaign.

All in all, the third district seems to be on the up grade. We are looking forward to another good year during 1935-1936.

Frank P. Winkler, Councilor

#### Fourth Councilor District

As Councilor of the Fourth District, I wish to submit the following reports:

Chester H. Johnson, M.D., Deputy Councilor reports: The Cherokee County Medical Society met on the second Wednesday of every month, except July and August. Have joint meetings with the staff of the Sioux Valley Hospital. Programs consist of one scientific paper and discussion of same. Also have discussion of cases, usually those from the Sioux Valley Hospital. The average attendance was fourteen.

J. R. Dewey, M.D., secretary Sac County Medical Society reports: The Sac County Medical Society met seven times during the year 1934, with an average attendance of more than eleven members out of 15 or 16 paid up memberships. The programs have consisted of papers by the members with discussion. Plans were enacted for care of the poor, consisting of a contract calling for 50 per cent reduction from the regular fees, with some exceptions. The bills are audited by a member of the society and the plan has worked fairly well. A joint meeting with the Sac County Dental Society for discussion of mutual problems and especially the Basic Science Law was held in December.

E. S. Parker, M.D., Deputy Councilor reports: With one exception every doctor in Ida county belongs to the Ida County Medical Society. Two or three meetings are held each year and during the past year these meetings have been business meetings only. The physicians of Ida county, together with those of Plymouth, Cherokee, and Buena Vista counties, belong to a "Four County Society" which meets twice a year at Cherokee for scientific purposes only. The four county meetings have always been well attended and have been of much benefit scientifically. Papers and discussions by members make up the bulk of most of the programs although usually outstanding men from surrounding medical centers have attended to read papers. Because of its apparent solvency Ida county does not, I believe, get Federal funds for relief purposes. Therefore the matter of medical relief

under Federal plans has not been so prominent a matter for discussion among the doctors as it has been elsewhere in the state. County cases are taken care of by the physicians of the county on order from the county welfare worker. Bills are presented to the board of supervisors monthly, with items billed according to the most recent, and reduced, fee bill adopted by the society; the total bill to show a 25 per cent discount to the county to be taken from the total. The one exception to this rule is that no surgical case shall cost the county more than \$75.00, net, this amount to include all post and preoperative care. This arrangement is by an agreement with the board of supervisors and the society, verbal only, and works well. The county usually allows patients the physician of their choice, but retains the right to send patients to a doctor of their own choosing, if they wish. All members of the society have sent written requests to our state senator and representative urging support of the Basic Science Bill.

C. L. Sievers, M.D., Deputy Councilor reports: Crawford County Medical Society has held one or two meetings during 1934 for the purpose of electing officers, but no scientific program was carried out. Arranged to have individual interviews with different members and to attend scientific meetings elsewhere. A few years ago when the society carried a county contract for the poor, we had wonderful meetings with splendid outside talent, but when we lost the contract, we had no means to promote such programs and we thought it best to take a little rest and then make a new drive for the county work. As a result we have had several meetings this year and have made arrangements with our supervisors whereby the county work has been turned over to all the doctors of the county. At our last meeting we decided to have a regular society meeting every month (on the second Wednesday evening), when a dinner will be served and the ladies invited. The expense of such meetings will be prorated to the members of the society. At these meetings we expect to have scientific papers by outsiders and by our own members.

Peirce D. Knott, M.D., Deputy Councilor reports: Woodbury County Medical Society held ten meetings during the year 1934, all of which were scientific and business meetings with the exception of one which was social. There were a number of meetings held in the different counties, primarily to discuss the Basic Science Law. A joint meeting of three county societies, namely, Buena Vista, Humboldt, and Pocahontas, was held December 20th at Pocahontas for the purpose of organizing an Interprofessional Relations group. Approximately one hundred attended. Several members of the state legislature were present and the Basic Science Law was discussed. The leaders of the various professions expressed the thought that this was a very timely organization. In reference to the contract plan of the Woodbury County Medical Society in caring for the indigent sick of the county, the clinic reports that from April 15, 1934, to February 15, 1935, a total of 27,313 cases passed through the service for medical and surgical care.

James E. Reeder, Councilor

#### Fifth Councilor District

During the past year it has been my pleasure to attend the meetings of the Council. The matters presented at each meeting were handled in a prompt and businesslike manner. The matters which were taken up at these meetings, legislative and others, have been handled so well by the central office that I have felt little was required from me in this district.

I attended the combined meeting at Boone where medical relief measures were discussed and the Basic Science Bill considered.

In view of the intense interest in all phases of medical economics, I believe a brief outline of the plan recently inaugurated by the Polk County Medical Society to help those individuals in the low income group to secure adequate hospital, medical and dental care will be of interest.

After careful preliminary study and survey the Polk County Medical Society, with the cooperation of the local, dental, pharmaceutical, nursing and hospital groups, has established a Medico-Dental Bureau through which is being provided complete medical and dental care to employed people with low income at fees commensurate with their abilities to pay. An advisory committee, composed of representatives appointed from each of the cooperating professions, reviews all bills for service, makes any feasible adjustments and in general coordinates the services of the Bureau. The executive office of the county society is the coordinating center for all details of the service. The Bureau is in no sense a clinic. It does not seek to compete for practice. Services are rendered by the physicians of choice through the Bureau and justifiable and mutually satisfactory fees and arrangements for payment of them are made by the Bureau. The bills of the cooperating professions are combined and the total amount adjusted to suit the ability of the patient to pay over a period of twelve months; then the payments are prorated among the creditors with proper consideration being given to that portion of the bills representing fixed expenses or costs.

The Bureau is purely a professional enterprise. It is not subsidized in any way by federal, state or county funds. It is an attempt to nullify the charges of the proponents of state medicine. Finally, it is an honest attempt to provide good, complete medical and dental service at fees commensurate with the patients' ability to pay.

W. W. Pearson, Councilor

#### Sixth Councilor District

The Sixth Councilor District, during the past year, has held meetings quarterly at variously easily accessible points.

March 13, 1934, a joint Sixth District-Poweshiek County meeting was held at Hotel Monroe-Gifford at Grinnell. Dr. P. E. Somers of Grinnell gave a paper on "The Light Under the Bushel" and stressed the importance of educating the public on medical and



health subjects by closely censored health programs. This paper was discussed by Dr. T. U. McManus of Waterloo and Dr. Aaron Conaway of Marshalltown.

It was agreed that such educational activities should be closely censored and aided by the Speakers Bureau and Public Relations Committee and other agencies working through the State Society.

An excellent paper on "The Test of Organized Medicine" was presented by Dr. Oliver J. Fay of Des Moines, outlining the necessity of close organization of county, district and state medical societies to strengthen the American Medical Association and the profession at large in the struggle against the socializing tendencies of the various foundations, insurance companies and other agencies. Dr. Fay proved that socialized medicine in Europe has been neither efficient nor economical.

The June meeting was an afternoon and evening meeting for physicians and their families, held June 28, 1934, as a joint Sixth District-Grundy County meeting at the Grundy County Golf and Country Club. An afternoon of golf, bridge and other amusements was followed by a 6:30 dinner and a program consisting of talks on "The Application of Preventive Medicine to the Public Milk Supply" by M. E. Barnes, M.D., of the University of Iowa and "The Proposed Basic Science Law" by R. D. Bernard, M.D., of Clarion and Fred Moore, M.D., of Des Moines and others from the State Medical Society office. This was a most enjoyable and profitable meeting held in the midst of most beautiful surroundings.

The September meeting was held at the American Legion hall at Toledo, Iowa, on September 20, 1934. The meeting was intended primarily as a deputy councilor's and county officer's conference in conjunction with committees from the State Society interested in the proposed legislative program and especially the proposed Basic Science Law. Drs. Harkness, Moore, Bendixen and Bernard presented able discussions on the proposed measure and an outline of activities supporting same. This was an excellent meeting, attended by over fifty physicians, many of whom were accompanied by their ladies.

The December District meeting, like a favorite brand of ice cream, "was not so hot" as the ice was so smooth that the Speakers Bureau program on "Socialization of Medicine," scheduled as a joint Sixth District-Benton County program at Van Horne was indefinitely postponed. Much work had been done to arrange for a good meeting at Van Horne and a future iceless meeting will be held in Benton County.

The March meeting was slipped ahead one day to accommodate the speakers and was held on February 28 at Marshalltown. T. C. Denny, M.D., of Des Moines, Medical Director, Iowa Emergency Relief Administration, discussed the topic "The Emergency Relief Program in Iowa." Dr. Denny gave a complete outline of the state organization of the medical relief plan; also a complete schedule of the rules and regulations for emergency federal medical relief in Iowa and a thorough discussion of the medical fee schedule agreement as outlined by the joint commit-

tees of the various interested organizations. This was a most valuable discussion coming at a most opportune time. Dr. T. F. Thornton, Waterloo, Delegate of the Iowa State Medical Society, gave a detailed report of the special session of the House of Delegates of the American Medical Association. This meeting and these discussions were the most important of any meetings held in the district during the year.

The above quarterly meetings have been purely economic in nature and no attempt has been made to hold scientific programs, leaving that to the individual county societies. Outstanding scientific programs have been held regularly by the counties in the larger centers and well attended by physicians in the surrounding territory. The high type of programs held in Marshalltown, Grinnell, Newton, Iowa Falls, Eldora and Waterloo, the chest clinics in Marengo, Toledo and other cities of the district, under the direction of the county society have been most commendable and of great value to those attending.

For brevity, I have omitted reporting by counties as there has been little general change of membership and other activities. The contracts for the care of the indigent remain generally similar to last year's contracts, with such changes as are in harmony with the general medical relief program.

In holding quarterly district meetings, I have reduced so far as possible visits to individual county societies, depending on an able deputy councilor to handle such duties in his local community. I have had prompt and courteous cooperation with these physicians and wish to thank them for same. The deputy councilors for the Sixth District are as follows: Benton County, C. J. Snitkay, Belle Plaine; Black Hawk County, A. J. Joynt, Waterloo; Grundy County, H. V. Kahler, Reinbeck; Hardin County, E. O. Koeneman, Eldora; Iowa County, I. J. Sinn, Williamsburg; Jasper County, H. P. Engle, Newton; Marshall County, A. D. Woods, State Center; Poweshiek County, C. V. Lawton, Grinnell; and Tama County, A. A. Pace, Toledo.

C. W. Ellyson, Councilor

#### Seventh Councilor District

The following reports of the deputy councilors give, in more detail than I can, an account of the activities of the unit organizations in the seventh district. In spite of the continued hard times the county societies, as a rule, are maintaining a high standard of scientific work.

As would be expected, a considerable amount of interest has been shown in the problem of how best to furnish medical service to county indigents. Various plans are being tried in the district but all of them, except the one in Dubuque County, seem to be satisfactory to the medical societies, the indigents, and the County Boards of Supervisors.

No district meeting has been held, there being no popular demand for one. The annual dinner for the officers of the county societies, the purpose of which

is to promote harmony and good fellowship rather than to do any serious scientific work, was well attended and apparently enjoyed.

Arthur W. Erskine, Councilor

**Buchanan County.** The Buchanan County Medical Society had four meetings the last year with dinner and program following. All meetings were well attended by the members and guests. At the last meeting we were fortunate in having Dr. Harkness for our speaker. At this meeting we had our senator and representative, dentists and newspaper men. Dr. Harkness presented the facts for the Basic Science Law and I believe sold the legislators on it.

Our society meets eight times a year as a staff to the Peoples Hospital.

Membership fifteen, same as last year.

We have a written contract with the Board of Supervisors for the care of the indigent in the county and which makes some provision for the semi-indigent. We feel very fortunate in our arrangements and everything is very harmonious with the authorities.

C. W. Tidball, Deputy Councilor

**Cedar County.** The Cedar County Medical Society has preserved an unbroken record for the past year of no regular meetings. Various reasons might be given for this neglect. The principal one is our nearness to Cedar Rapids and Iowa City, where interesting and instructive meetings are available. There has been shown a readiness to cooperate in such plans as the district councilor has brought to our attention. Speakers from Cedar Rapids and Iowa City have promised to be present here some time within the next two weeks. At this meeting elections of officers will be held. Dr. Jenks, the president, has been in poor health for a large portion of his incumbency but we are now able to report that his health is improved.

E. J. Van Metre, Deputy Councilor

**Clinton County.** Scientific meetings are held monthly except during July and August. At these meetings we have a speaker from one of the medical centers such as Chicago or Rochester. Business meetings are called as the occasion arises.

The county society has finally succeeded in having the supervisors accept a contract providing for the care of the indigent and those receiving relief. All members are cooperating in an effort to make this work a success. This plan gives the poor the privilege of calling their own physician. Under the contract for 1935 we receive \$16,500.00. The county venereal work is still being done by an individual who is a member of the local society.

In Clinton County there are fifty-three physicians. Forty-two of these are members of our society. We have three members from Jackson County, making in all forty-five members. The number of members is the same as last year.

R. T. Lenaghan, Deputy Councilor

**Delaware County.** We have ten paid members in our county and six eligible physicians whom we hope to have with us as members before long. Last year,

out of the sixteen eligible members, only five paid their dues. We have had three good meetings this year, attended by both members and non-members.

At present we are operating on a fee bill basis for the care of our indigent sick. This plan seems to have worked satisfactorily for the doctors as well as the Board of Supervisors. However, during the month of January our medical bills have been considerably higher than at any time previously. We now have 630 families on relief in Delaware County; in 1934 there were 400.

Cooperation among the doctors during the past two years has been better than ever before in the history of the county society.

J. I. Jones, Deputy Councilor

**Dubuque County.** Membership, fifty-five (increase of one); meetings, nine regular meetings (average attendance, forty-six); one special meeting (attendance, thirty-three).

At the May meeting, the members of the society were the guests of the Board of Trustees and the Superintendent of Sunny Crest Sanatorium. Besides highly instructive lectures on every phase of the tuberculosis problem, a sumptuous dinner was served in the evening. All visiting physicians were high in their praise of the administration and equipment of the institution as well as the beauty of its grounds. The Dubuque Pharmacists Association also entertained the society at a picnic in August. This was an opportunity for new contacts between the members of each group and has resulted in greater cooperation between the two societies.

**Postgraduate Course:** The Speakers Bureau of the Iowa State Medical Society conducted a postgraduate course in internal medicine in Dubuque during the fall months. All but one of the lectures were given by members of the medical staff of Iowa State University Medical School. It was attended by sixty men from the tri-state area. While certain weaknesses in this type of instruction became evident, on the whole the course was fairly satisfactory. Possibly with more experience such courses could be rendered more valuable to the men in active practice.

All of those who took the course were shocked by the tragic death of Doctor C. W. Baldrige. Everyone had a feeling of personal loss; certainly Iowa has lost a leader in the science of hematology. The Dubuque Society has gone on record as favoring the establishment of a research fund by the State Society in Doctor Baldrige's memory. The final lecture of the postgraduate course was given by Professor A. J. Carlson of Chicago University. Doctor Carlson gave a general review of endocrinology. The meeting was attended by doctors, dentists, druggists, veterinarians, and nurses. One hundred and fifty attended the meeting which was concluded by a dinner at the Julien Dubuque Hotel. All those present pledged their support to the proposed Basic Science Law of Iowa because it was recognized as a very important public health measure.

**Care of Relief Cases:** It is estimated that over two thousand families (approximately 9,000 persons)



have been on relief in Dubuque County during 1934. The medical profession aided the county physician in caring for the sick during the first nine months of the year. At that time it became physically impossible for the county physician to continue the work and the society entered into a contract on a fee basis (fifty per cent of the minimum fee schedule of the State Society). As a result the cost to the county rose to a somewhat equitable figure but the county authorities insisted that it be reduced. The society then agreed to do the work for \$1,500 a month, allowing each patient to select his family physician regardless of whether he was a member of the society or not. Later the figure was reduced to \$1,350 (an average of approximately \$22.00 per month to each physician in the county). This figure (27 cents per capita per year) is ridiculously low and is an injustice to the medical profession. In spite of the injustice it can be recorded that there have been only the most trivial criticisms in regard to the character of the service rendered.

Scientific Advancement: In spite of the unusually difficult conditions, the Dubuque Society has been active along scientific lines. This is reflected in the publication of scientific papers in state and national medical journals. Nineteen such articles appeared in the former and four in the latter. In addition many members read papers at the annual meeting of the State Society and before neighboring county societies and hospital staff meetings.

Guest Speakers:

- A. W. Erskine, Cedar Rapids—State Society Organization.
- H. M. Korn, Iowa City—Cardiovascular Disease.
- J. A. Meyers, Minneapolis—Control of Tuberculosis.
- J. H. Peck, Des Moines—The Diagnosis of Tuberculosis.
- L. G. Rigler, Minneapolis—Early Diagnosis of Carcinoma of the Stomach.
- O. H. Wangenstein, Minneapolis—Diagnosis and Treatment of Intestinal Obstruction.
- L. A. Brunsting, Rochester—Treatment of Syphilis.
- F. A. Figi, Rochester—Treatment of Fractures of the Jaws.
- P. P. Vinson, Rochester—The Bronchoscope in the Diagnosis and Treatment of Pulmonary Disease.

F. P. McNamara, Deputy Councilor

Jackson County. We have fourteen active members out of a possible sixteen. The two who are not members feel that the expense is too great at present. We have neither gained nor lost any members this year.

We have held five meetings, four of which were regular meetings with scientific programs, presented by men from Davenport, Iowa City and Cedar Rapids. One meeting was called to determine action on our Congressman in regard to impending legislation. We have no county contract at present. None of

our members care for one. Poor relief work is cared for by whoever is called and the bill for services is presented to the Board of Supervisors and the county relief worker. A twenty per cent reduction is made.

Geo. C. Ryan, Deputy Councilor

Johnson County. Summary of membership at the beginning of 1934:

Life members .....	3
Active members .....	87
Associate members .....	8
Non-resident members .....	5
Affiliate members .....	2
Junior members .....	31
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Total .....	136

Members paying full dues. Twenty-three were received by application, three by transfer from Junior membership, and two by transfer from other societies. Two were lost by resignation, ten by transfer to other societies, and one by death. Net gain: 15.

Junior and Affiliate members. Forty-nine were received by application. Fifteen were lost by resignation, lapse or removal from the county and three by transfer to full membership. Net gain: 31.

Summary of present membership (February 1935):

Life members .....	3
Active members .....	102
Associate members .....	10
Non-resident members .....	3
Affiliate members .....	2
Junior members .....	62
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Total .....	182
Members paying full dues.....	115
Members paying local dues only.....	64
Members paying no dues (Life Members) .....	3

Ten meetings were held, nine of which included scientific programs. The only guest speaker of the year was Harry L. Alexander, M.D., of Washington University, St. Louis.

A joint meeting of the Johnson and Linn County Societies, held April 25, 1934, under the auspices of the Administrator of the University Hospitals, was a most successful innovation.

The average attendance for the ten meetings was 76 members and 7 guests.

Horace M. Korn, Secretary

The foregoing is the very complete report on the activities of our society by our secretary.

The only additional item which might be added to the report of the deputy councilor is that the practicing physicians of Johnson County, outside of the University Hospital Staff, through the medium of the Mercy Hospital Staff, have effected a contract with the Board of Supervisors for the medical care of the indigents. The details are quite similar to those in effect in Linn County, i.e., the Board of Supervisors pay \$1.25 per indigent family, per month, to the physicians, who assume all medical and surgical care of the indigents of the county, excepting ob-

stetrical cases. Details such as biologicals, pay for hospitalization, are outside of the above contract, although this contract constitutes all the remuneration that the doctors receive, and all the obligations which they assume.

Geo. C. Albright, Deputy Councilor

Jones County. Jones county has a population of twenty thousand, of which the medical population numbers sixteen. Of the sixteen, twelve are members of the Jones County Medical Society. The county supports two well organized hospitals.

The society meets regularly twice a year, in business session. During the past year two extra meetings were held. Because of the close proximity to Cedar Rapids, most of our members attend regularly the scientific meetings of the Linn County Medical Society.

The members of the Jones County Medical Society are active and interested in the welfare of organized medicine.

T. M. Redmond, Deputy Councilor

Linn County. The membership of the society at the end of 1934 was as follows:

Active members .....	103
Life members .....	2
Non-resident members .....	25
Interne members .....	3
Associate members .....	1
Honorary members .....	17
Total .....	151

About eight physicians in active practice in Linn County are eligible to membership who are not members of the society.

On our society programs from May, 1934, to May, 1935, we have been privileged to have the following outstanding guest speakers:

William J. Mayo, M.D., Rochester, Minnesota—Some of the Physical Properties of Water.

James T. Priestley, M.D., Rochester, Minnesota—Current Conception of Nephrolithiasis.

Paul J. Hanzlik, M.D., Professor of Pharmacology, Leland Stanford University—Some of the Recent Advances in Pharmacology and Therapeutics.

Dean Lewis, M.D., Baltimore, Maryland, Professor of Surgery, Johns Hopkins College of Medicine—The Differential Diagnosis of Breast Tumors.

Joseph B. DeLee, Chicago, Illinois—Forceps Operation and Episiotomy.

Russell L. Cecil, M.D., New York, N. Y.—Some Phases of the Arthritis Problem.

Robert A. Strong, M.D., Professor of Pediatrics, Tulane University, New Orleans—Treatment of Empyema in Children.

Ray Lyman Wilbur, M.D., Palo Alto, California—The Relation of the Doctor to Society.

William H. Olmsted, M.D., St. Louis, Mo.—The Vascular Diseases of the Extremities.

Louis G. Herrmann, Associate Professor of Surgery, Cincinnati University—The Pa-Va-Ex Method of Treating Obliterative Arterial Diseases of the Extremities.

Arthur F. Bratrud, M.D., Associate Professor of Surgery, University of Minnesota—The Injection Treatment of Hernia.

Guy S. Van Alstyne, M.D., Chicago, Illinois—Diagnosis of Hypertrophic Pyloric Stenosis, Preoperative Preparation, the Operation, the Postoperative Management and Weight Curve.

Emil Novak, M.D., Baltimore, Maryland—Functional Disturbances of Menstruation.

L. W. Dean, M.D., St. Louis, Mo.—The Diagnosis and Treatment of Nasal Sinus Disease in Infants and Young Children.

George V. I. Brown, M.D., Milwaukee, Wisconsin—Plastic Treatment of the Nose.

The average attendance at our meetings throughout the year has been 210; maximum attendance at any one meeting 450.

The local society assisted in the meetings of the Iowa Surgical Society in Cedar Rapids, September 29, 1934, and in the meeting of the Mississippi Valley Conference on Tuberculosis and the Mississippi Sanatorium Association, which met in Cedar Rapids, September 27, 28, and 29, 1934.

The experiment of supplying medical service to Linn County indigents under the insurance plan is being observed with no little interest by indigents, taxpayers, social science experts and members of the organized medical profession. The conception and development of the plan has been based upon two major premises. The first is that purely medical problems such as to whom medical service shall be rendered, the character of such service, how long it is to continue, and by whom it shall be rendered, can be solved more easily and probably better by medical men than by social workers, no matter how good their intentions. The plan provides, therefore, that responsibility for settling all such questions, as well as the distribution of the payment for medical service, shall be assumed by the medical society, leaving only the determination of indigency in the hands of the relief department.

The second major premise is that a large proportion, probably ninety per cent of those now on relief, are unfortunates who, through no fault of their own, are unable to meet their bills. They will again become self-sustaining citizens. As a means toward retaining their self-respect, it is believed that they should be allowed to go to physicians of their own choosing, and should be treated in about the same way as good doctors treat patients whose family income is approximately \$100.00 per month. To achieve such an objective, it was essential that neither those rendering medical care or paying for it could count the cost. Under the plan, the members of the Medical Society cannot count the cost because they have agreed to render adequate service as may be necessary to all individuals now on relief. The plan of



insuring the county against the cost of medical care was conceived so that it, too, could not count the cost. The tentatively agreed upon rate of \$1.15 per registrant is equivalent to about one cent per day for each individual on the county relief rolls. Whether this rate is too high or too low will have to be determined by trial.

While it is too early to say whether the experiment is likely to succeed or fail, those in charge of it appear confident that it can be perfected with the cooperation of the county authorities and the unanimous support of the members of the society. They are enthusiastic about the spirit of unselfishness, self-sacrifice, and willingness to abide by rules intended to promote the greatest good for the greatest number, that has been shown by the members.

L. M. Downing Deputy Councilor

#### Eighth Councilor District

The nine counties of this district have a population of 260,000. There are, in this district, 284 active medical practitioners, 19 inactive or retired, and 8 irregular practitioners, not one of whom is a member of the medical organization. In addition, there are 80 chiropractors and osteopaths and 2 naprapaths.

Most of the societies meet monthly, except during the summer months. The Lee County Medical Society meets quarterly. During the past year the Muscatine County Medical Society did not live up to its previous record and met but four times. The Van Buren County Medical Society meets on call of the officers.

Scott county has an average attendance at meetings of 60 per cent; Louisa, 83 per cent; Jefferson, 75 per cent; Henry, 80 per cent; Washington better than 80 per cent; Van Buren, 70 per cent, and Muscatine, 50 per cent. The Lee County Medical Society had special programs last year and, with a membership of 48, had an average attendance of 100. All the societies use imported talent for their programs. Louisa, Muscatine, Jefferson and Henry counties combine this with local talent. The Tri-County Society of Henry, Washington and Jefferson counties continues to thrive.

Three counties—Des Moines, Washington and Louisa—have made some united effort to list delinquent debtors. No other system appears to be very successful and this one may not be but Washington county, at least, has been well satisfied with the effort.

The members of the societies in each county have done much commendable work this winter relative to the legislative program of the State Society.

Washington, Louisa, Muscatine, Henry and Scott counties have interprofessional organizations or have had meetings of these five professional groups.

Two or three of the counties have had public health addresses. Three county societies have Woman's Auxiliary organizations, namely, Washington, Louisa and Muscatine counties.

Each county, with the exception of Keokuk in Lee county, has a contract with the board of supervisors for the care of the indigent. These contracts vary in

each county but are far ahead of the old way of caring for the poor.

The following chart sets out the cost of medical aid for those on relief in the nine counties in this district during 1934 and the amount paid to the county medical societies.

County	Medical Care	Nurses & Hospital	Total Med. & Hospital	Amount paid Med. Societies
Des Moines	\$72,720		\$72,720	No data rec'd
Henry	3,511	1,123	4,634	\$ 4,112.06
Jefferson	4,566	839	5,405	4,136.00
Lee	7,608	7,331	14,939	2,000.00*
Louisa		8,926	8,926	3,400.00
Muscatine	12,815	5,121	17,936	12,000.00
Scott	40,619		40,619	25,732.00
Van Buren	1,500	239	1,739	1,500.00
Washington	5,238	11	5,249	4,578.75
*Fort Madison.				
Total amount spent for medical and hospital care equals \$172,167.00.				

Three or four of the counties are represented in the emergency relief set-up. The relationship between the societies and the relief office is not very cordial in some instances; in two or three a very cordial arrangement is in force. In no instance of lack of cordiality is it the fault of the society.

C. A. Boice, Councilor

#### Ninth Councilor District

The societies of the ninth district have had a successful year as is shown by the reports of the various deputy councilors given below. While economic problems have assumed added importance and have required additional time for consideration, the scientific programs have not been neglected. The societies have shown an increased interest in interprofessional meetings and have been active in their support of the efforts of the Legislative Committee.

Harold A. Spilman, Councilor

Appanoose County. The Appanoose County Medical Society held two meetings during the year of 1934. Both were well attended. The society agreed to the appointment of a committee of three as a reviewing board to examine the applications of patients desiring to go to Iowa City. Those who could afford to pay a reasonable fee for their treatment at home were refused permission to go to Iowa City. It was also decided to use the three dollar examining fee paid by the state for the examination of those committed to the hospital at Iowa City to apply on the state dues of all the physicians of the county.

C. S. Hickman, Deputy Councilor

Davis County. The Davis County Medical Society met about ten times in 1934, or nearly monthly. Our programs are interesting and well attended. The affairs of the society are in good condition. Most of the eligible physicians are members of the county society.

H. C. Young, Deputy Councilor

Keokuk County. The activities of the Keokuk County Medical Society during the year ending December 31, 1934, are as follows: A meeting was held in January with all members present. Dr. L. F. Catterson of Oskaloosa presented a paper on "Preventive Medicine and Medical Economics." At our April meet-

ing, Dr. F. L. Nelson of Ottumwa presented the topic "Diseases of the Genito-urinary System," which was discussed by Dr. Keith Droz of Washington. The x-ray aspects of the subject were given by Dr. H. H. Webb of Ottumwa.

The society sponsored a meeting and a chest clinic, conducted under the auspices of the Iowa Tuberculosis Association in September. Interesting cases were presented and examined. The afternoon meeting was followed by a banquet at the Sigourney Hotel and a discussion of the subject of "Heart Disease" by Dr. D. J. Glomset of Des Moines.

A joint business meeting was held in November with the Mahaska, Keokuk and Poweshiek County Medical Societies. The Basic Science Bill was discussed. Following this meeting, officers were elected for 1935.

J. L. Doyle, Deputy Councilor

Lucas County. Following is a report of the activities of the Lucas County Medical Society for 1934.

A luncheon meeting was held the second Tuesday of each month and the attendance was about eighty per cent. A dinner program was given by the society on March 22 at Hotel Charitone. On the program were Charles B. Taylor, M.D., President of the Iowa State Medical Society, and Harold A. Spilman, M.D., Ninth District Councilor.

All but one of the practicing physicians of Lucas County were members of the society.

R. C. Gutch, Deputy Councilor

Monroe County. The activities of the Monroe County Medical Society during the past year are as follows:

Four regular and two called meetings were held during the past year. Programs at the regular meetings consisted of papers by members, reports of unusual and interesting cases and round table discussions. The woman's auxiliary was entertained at a six o'clock dinner preceding the annual meeting, which was held later in the evening.

The society is active, responsive to requests from the state society office and a splendid spirit of harmony and cooperation prevails. Our membership has been increased by two. We have had but one death among the doctors in the county.

T. A. Moran, Deputy Councilor

Mahaska County. The Mahaska County Medical Society has had a very interesting year in 1934. On February 13 we had a joint meeting with the Keokuk, Marion and Wapello societies, with Drs. P. C. Jeans and H. L. Beye of Iowa City as speakers. In March and April we had a postgraduate course in neurology and psychiatry which was attended by men from five counties.

Two of our members prepared papers for the speakers bureau for radio broadcasts. Three of our members presented a program before the Marshall County Medical Society in Marshalltown.

The society sponsored a diphtheria immunization campaign and a tuberculosis campaign during the year as well as a "check-up" examination of rural school children through nurses employed under PWA.

The meetings during the year have been well attended and the members of our society are becoming stronger supporters of our medical organizations, both state and local, every year. Our membership record for the year is up to standard and will continue so for next year.

L. F. Catterson, Deputy Councilor

Marion County. Five meetings were held during the year, with an average attendance of ninety-five per cent. The October meeting was a joint meeting with the Marion County Veterinary Medical Society. This has been an annual event for the past eight years and has always proved to be our outstanding scientific meeting of the year. Interest in the society is excellent. We boast of a one hundred per cent membership. Seventy-five per cent of the membership attended the state society meeting in Des Moines last May.

We had no postgraduate course in this county, however some of the membership attended courses in neighboring counties.

We have a woman's auxiliary which is active. Our blanket contract for the care of the indigent sick expired February 1, 1935. At this time we are negotiating with the County Board of Supervisors for a new contract operating on the percentage basis.

Corwin S. Cornell, Deputy Councilor

Wapello County. The activities of the deputy councilor and those of the secretary have been very closely related. The deputy councilor attended a joint meeting of the Board of Trustees and the council at Des Moines in September, 1934, and brought back to the society such facts as were permissible and timely. The other meeting in January to which he was invited, he was unable to attend because of illness.

At the request of Dr. T. C. Denny, medical director of the Emergency Relief Administration, the deputy councilor appointed a committee of which he is chairman, to deal with the care of the indigent of Wapello County. This committee is a little irregular in that members of a former committee working along this same line were retained. The committee consists of Dr. Evon Walker, chairman, Dr. E. B. Howell, Dr. D. L. Rater, and Dr. D. O. Bovenmyer. We did not care to lose the experience and knowledge that Dr. Howell and Dr. Rater had accumulated.

There was a dinner meeting held under the auspices of the Wapello County Medical Society and Sunnyslope Sanatorium, to which all the physicians of the ninth councilor district were invited. Dr. J. A. Myers of Minneapolis held a clinic in the afternoon and gave a very excellent address on "Modern Aspect of Diagnosis, Treatment and Prevention of Tuberculosis." The meeting was well attended and seemed quite successful.

In November a most interesting dinner meeting of the society was held at which the Kiwanis Club, the Rotary Club, the dentists and nurses of Wapello County were guests. Dr. W. W. Bauer of the American Medical Association gave the address of the evening.

Evon Walker, Deputy Councilor



Wayne County. Our society holds meetings six times a year—every other month. Meetings this year were held as usual. All legislative candidates were contacted as to their attitude on medical legislation and all promised support, particularly of the Basic Science Bill.

The president of the society, Dr. B. B. Walker, the secretary, Dr. Sollenbarger, and myself act as a committee to meet with the County Board of Supervisors to adjust any medical bills submitted for work for the indigent, which seem out of line to the board. In our county the nearest physician cares for the indigent needing medical care and he makes the regular charge less 25 per cent. This has worked out satisfactorily so far.

S. Weston Corbin, Deputy Councilor

#### Tenth Councilor District

District number ten has been more than ordinarily active in the past year and while but one district meeting was held, the county societies, individually and in groups, have shown keen interest as manifested by the number and character of their meetings. I submit reports of the county deputy councilors.

James G. Macrae, Councilor

Adair County. During the past year the Adair County Medical Society has held its usual meetings. In addition to this a number of informal meetings were held and at these informal meetings problems of particular interest to Adair County physicians were discussed. The result has been a uniformity in the matters of fees, care of indigent, etc., over the entire county.

At the semi-annual meeting in June, a dinner was held at Hotel Greenfield in Greenfield. Following the dinner we had three excellent addresses given by Dr. Ralph Parker, Dr. George May and Dr. C. C. Walker of Des Moines, all bearing on "Infections of the Upper Respiratory Tract." Our district councilor was also a guest of the society for the evening.

A. S. Bowers, Deputy Councilor

Adams County. The report of the activities of the Adams County Medical Society for the year 1934:

Have seven active members. Held five meetings with all members present. All members are in good standing—membership one hundred per cent. Held tuberculin test at school on October 3 with the assistance of Dr. John H. Peck of Des Moines. On October 5 the readings of the tuberculin test were interpreted. Following this, was held a chest clinic conducted by Dr. John Peck and Dr. Elmer E. Kottke of Des Moines.

The Adams County Medical Society at their regular meeting in December, 1934, voted and elected Dr. W. H. Clary of Prescott to life membership in the Adams County Medical Society. Dr. Clary has not been in active practice since 1919 as he is an invalid. We ask that the House of Delegates of the Iowa State Medical Society also make him a life member.

W. F. Amdor, Deputy Councilor

Clarke County. The Clarke County Medical Society has functioned very harmoniously during the past year. All eligible physicians in the county except one are members of the society and are contributing to the smooth operation of the same. We have held both informal and scientific meetings, which we feel have done much toward establishing a feeling of mutual helpfulness in our group.

We are privileged to have a member of this society as secretary of the State Board of Health.

The Clarke County Medical Society joins with the other societies of the tenth district in expressing our appreciation of the efficient manner in which the councilor of this district has conducted his work.

H. E. Stroy, Deputy Councilor

Decatur County. The Decatur County Medical Society has been active throughout the past year. Quarterly scientific meetings were held, the last of which was attended by forty-five physicians. G. W. Thompson, M.D., of the Mayo Clinic spoke on "Transurethral Prostatic Resection," and E. V. Allen, M.D., also of the Mayo Clinic, spoke on the subject of "Hypertension."

The society has cooperated with the state society in the legislative program and in the interprofessional relations program. Plans are now under way for a postgraduate course to be held at the Decatur County Hospital.

A cooperative fee schedule agreement with the Board of Supervisors and the welfare department is proving mutually satisfactory.

J. E. McFarland, Deputy Councilor

Madison County. The Madison County Medical Society has been active during the past year, holding regular monthly meetings. Both local and outside talent has been used in the scientific programs. Madison County has furnished talent for neighboring county medical society meetings. The deputy councilor arranged for a meeting of the allied professions of Madison County on December 27 to discuss the proposed Basic Science Bill. There were sixty in attendance and some interest in a permanent organization was manifested.

C. B. Hickenlooper, Deputy Councilor

Ringgold County. The Ringgold County Medical Society has functioned very satisfactorily the past year. Most meetings have been on call and have averaged one each month. We have used both local and outside talent.

We have what we consider one hundred per cent membership. There is one doctor in the county who operates a drug store and does not care to be classed as an active practitioner, who is not a member.

As in the two previous years, we have entered into a lump sum contract for the care of the indigent, which seems quite satisfactory to both the profession and the Board of Supervisors.

E. J. Watson, Deputy Councilor

Taylor County. The activities of the Taylor County Medical Society for the past year have consisted of:

1. Monthly luncheon meetings. 2. Diphtheria immunization treatments to pre-school and school chil-

dren. 3. Cooperating with the Iowa Tuberculosis Association in holding a chest clinic in Bedford. 4. Cooperating with the Iowa Tuberculosis Association and the Parent Teachers Association in administering the tuberculin test to all school children and citizens of Bedford who desired it.

G. W. Rimel, Deputy Councilor

Union County. The Union County Medical Society has continued its customary practice of having monthly meetings which are held the first Wednesday in each month at the Greater Community Hospital in Creston. At this time some member of the society presents a paper on some subject of his own choice. These meetings are well attended and the presentations have been appreciated. A postgraduate course was given in February, March and April, 1934, under the auspices of the Speakers Bureau. There was a very good attendance and the course was greatly appreciated by all the subscribers. In the months of February and March, 1935, a tuberculosis testing program was instituted in the county and carried out by members of the county medical society under the direction of the State Tuberculosis Association. This was a county-wide project, including testing of children in all schools in Creston with the exception of the lower grades. Cooperation of the physicians was excellent and it was felt that the project itself was very much worthwhile.

John C. Parsons, Deputy Councilor

#### Eleventh Councilor District

Below are given reports from each of the deputy councilors of the Eleventh Councilor District, which show a detailed report of the activities of the individual counties.

All of the counties are interested and active in supporting the Basic Science Law. Three of the counties—Harrison, Cass and Pottawattamie—have contracts for the medical care of those on relief. There were two district meetings held during the year. The spring meeting was held in Shenandoah and the fall meeting at Harlan. Both were very well attended.

A ten weeks' postgraduate course, under the auspices of the Speakers Bureau of the Iowa State Medical Society, is now in progress in Council Bluffs with a weekly attendance of about seventy doctors from this district and from Omaha.

We expect in the near future to have a discussion of the state-wide plan for the medical care of those on relief by Dr. T. C. Denny, medical director, State Emergency Relief Administration.

M. C. Hennessy, Councilor

Audubon County. The Audubon County Medical Society had four meetings during the year and had two joint meetings with Cass County. Election of officers was held in December, when we had our councilor as our guest. The Audubon County Medical Society has one hundred per cent membership and has maintained this record for a number of years.

W. H. Halloran, Deputy Councilor

Cass County. The Cass County Medical Society has been active during the year 1934. All the eligible physicians in the county have held membership and

cooperated in presenting good scientific papers and in attendance at the meetings.

The Audubon County Medical Society members have joined with us in our programs and have contributed to the success and pleasure of our meetings.

All of the meetings have been held in the evening following a dinner. There is something about the sociability of a good dinner that helps in the regular attendance.

Six regular meetings have been held during the year, two of which were put on by outside talent. A heart and lung clinic, sponsored by the Iowa Tuberculosis Association was conducted by Dr. Daniel J. Glomset and Dr. John Peck of Des Moines on September 14, 1934.

Through the Speakers Bureau a very good program was presented by Dr. C. B. Hickenlooper of Winterset on the subject of "Amebiasis," and Dr. E. E. Shaw of Indianola on the subject of "My Experiences While in Vienna." We are grateful for the talent furnished us by the Speakers Bureau and the Iowa Tuberculosis Association.

At the November meeting Mrs. M. C. Hennessy of Council Bluffs, district organizer for the Woman's Auxiliary, met with the wives of the Cass County physicians and assisted in the organization of a Woman's Auxiliary to the Cass County Medical Society.

The society is now active and contributing to the interest in the organization of the medical profession in the county.

R. L. Barnett, Deputy Councilor

Fremont County. On March 22, 1934, our councilor addressed the members of our society concerning the CWA. Later in the year I participated in the meeting of the county society officers of this district at Council Bluffs. At this meeting the Basic Science Law was discussed. At different times during the summer and fall, different members of our society contacted our candidates for the legislature. Our senator and representative expressed themselves in favor of the Basic Science Law.

We feel that our county society has accomplished something definite during the year. Our organization is in unison for the betterment of mankind. Something is done every day along the line of preventive medicine.

A. E. Wanamaker, Deputy Councilor

Harrison County. The Harrison County Medical Society meets the first Monday of each month. The program, presented by the members, is usually of the nature of a symposium. Medical meetings in the larger cities are frequently attended by our members. A picnic attended by the members and their wives, is held each year. A satisfactory contract is held for the medical care of the indigent.

F. H. Hanson, Deputy Councilor

Mills County. The Mills County Medical Society held its annual meeting on Thursday, December 6, 1934, and elected its officers for the year 1935. On February 22, 1935, a special meeting was held to consider action on the Basic Science Bill. It was decided that petitions to our senator and representative were



proper and steps were taken to submit such petitions. No other activities have been undertaken by this society.

T. B. Lacey, Deputy Councilor

Montgomery County. There have been no activities of the Montgomery County Medical Society so far as the meetings or programs of any kind are concerned. The officers are holdovers because no meeting was called for the purpose of electing new ones and there seems to be no desire on the part of the officers to change the system. The doctors seem interested in keeping up their membership because of medico-legal protection and in order to be in good standing so that they can attend the state society meeting and retain their good standing in the American Medical Association.

J. Clark Cooper, Deputy Councilor

Page County. As deputy councilor I have tried to stimulate the interest of the members of our society in the different medical activities, such as postgraduate courses, legislative program, economic problems, etc. Too many of our members want to let the officers do it all.

We have had a good attendance from Page County at all of the monthly meetings of the Southwestern Iowa Postgraduate Medical Group and an equally good number are taking the ten weeks' postgraduate course put on at Council Bluffs by the Speakers Bureau.

Three members of our society put on the program for the Decatur County Medical Society recently, when they were greeted by a full membership.

Two physicians in the county who are eligible to membership to the county society have through the years persistently refused to associate themselves, with no stated cause for refusal. Another non-member is a retired doctor-farmer.

Our present ratio of licensed practitioners to population seems to be sufficient to take care of the needs. With the present economic situation, the doctors are working away with little complaint but inadequate payment for services rendered.

J. F. Aldrich, Deputy Councilor

Pottawattamie County. The following report is a report of the activities of the Pottawattamie County Medical Society for the past year:

While there have been many minor activities such as our monthly meetings there have been five major interests:

1. Since May 1, 1934, this county society has been under contract with Pottawattamie County to supply medical care to the indigent poor on a fixed fee basis. The arrangement has been fairly satisfactory to both parties concerned, and, although the remuneration to the doctors has not been great it has represented a distinct improvement over the contracts under which the society supplied such care, in the past either gratis or for a merely nominal sum. With few exceptions the members of the society have cooperated completely and there has been little evidence of the prophesied difficulties which would arise out of such contract. One major difficulty has been encountered,

namely, the manner in which the quota plan in relation to the sending of patients to Iowa City has worked hardships on the men whose specialties must necessarily deal largely with chronic illnesses. These cases of no teaching value whatever are being sent to Iowa City at a fantastic cost to the county and represent a total financial loss to the local physicians.

2. On May 1, 1934, the society offered to the local Board of Education a plan for the immunization of school children against diphtheria. The plan was well received and was actively undertaken by the Board of Education and lay groups involved and was instrumental in immunizing in excess of 3,000 children, or, approximately 40 per cent of the total school census. This work was done entirely at the patient's expense or with the aid of public philanthropy. It was all done in the physicians' offices and by the physician of the patient's choice. A glance at the vital statistics as of this date will show that there has been a very marked diminution in the incidence of diphtheria in this community since the program was completed. A report of this program can be found in the January, 1935, issue of THE JOURNAL of the state medical society.
3. Because of a universal feeling of dissatisfaction with the various contracts undertaken by individual physicians, this society has begun a formal scrutiny of all such contracts. The society feels that by analysis of such contracts those which are working a real injustice on the physician as an individual and as a group may be adjusted or eliminated.
4. In cooperation with the state society, Pottawattamie County is actively supporting the Basic Science Bill by means of interviews with our representatives, petitions, and letters from lay friends.
5. Beginning on Monday, February 11, a postgraduate course as outlined by the Speakers Bureau was begun in this city. There will be ten such meetings at weekly intervals. To date seventy-five physicians in this district have signified their desire to attend this course, and at the first meeting there were approximately seventy in attendance.

Jack V. Treynor, Deputy Councilor

Shelby County. The activities of the Shelby County Medical Society during 1934 include: Nine paid memberships. Examinations at public health infant welfare clinic. Sponsored campaign for bond issue to erect county hospital (unsuccessful). Annual meeting and election of officers on December 9, 1934.

A. L. Nielson, Deputy Councilor

Dr. Harold A. Spilman: Mr. Chairman, I move that the report of the chairman of the Council and the reports of the councilors of the individual districts as printed in the handbook be approved.

*The motion was regularly seconded, put to a vote and carried.*

President Harkness: We will now have the reports of Council Committees. The first is the Speakers Bureau Committee.

## Reports of Council Committees

### REPORT OF THE SPEAKERS BUREAU COMMITTEE

To the Council:

Another year has rolled around, and the Speakers Bureau has strived to further the purposes for which it was organized, namely, increasing the efficiency of the practitioner in Iowa; promoting the solidarity of the profession; developing medical leadership in each community, and educating the public in the problems of health. There is no yardstick which we may apply to ascertain how much we have achieved in any one year's work, as the results of our efforts are intangible things, and our only means of determining the value of the work lies in the expression we receive from the men in the profession as to what they have gained. This point will be elaborated later on in the report.

We have presented ten postgraduate courses this year, with a total enrollment of around four hundred fifty-five members. This is the highest number we have ever had enrolled in one year, and we feel that such a record shows a belief on the part of the physicians in Iowa that these courses are very much worthwhile. Last spring we presented a course at Creston in which there were sixty-five members enrolled from many surrounding counties. Lecturers from outside the state were used for this course, and we are more than grateful to them for their help. During the spring months, we also presented courses at Mount Pleasant, where there were twenty-six doctors enrolled, and at Oskaloosa, where forty-four were enrolled. Outstanding men from all parts of the state and from the College of Medicine were the lecturers for these courses.

In the fall arrangements were made with the faculty members of the State University of Iowa for a course in medicine to be given at Fort Madison, Davenport, and Dubuque, and for a course in surgery at Ames, Humboldt, and Ottumwa. We also cooperated with the men in the northeastern part of the state in arranging a course on anatomy at New Hampton. The enrollment for these courses was as follows: Sixty-seven members at Davenport, fifty-nine at Dubuque, twenty-three at Fort Madison, forty-seven at Ames, forty-four at Humboldt, thirty-eight at Ottumwa, and fifty-two at New Hampton. Mimeographed outlines of these lectures were furnished to the men taking the courses. The faculty members made out outlines of these lectures and mimeographed copies were run off in the central office and mailed out to the members.

At the conclusion of the university courses, the Speakers Bureau Committee gave a complimentary dinner to those men on the faculty of the College of Medicine who have so generously cooperated in this postgraduate work during this and past years. The committee met with the faculty members on December 20th in the Iowa Memorial Union, and after the dinner every man was asked to give his opinion of

the value of such extension work and suggestions as to how the courses might be improved. Without an exception, the doctors of the university expressed themselves as being very much in favor of continuing the work, and those who had not considered it worth while at the beginning confessed that they had changed their minds and were of the opinion that it was of value and should be carried on. The committee was glad to pass on to these faculty men the many favorable comments which have been received on the courses from time to time, and to let them know that some communities were so impressed by the worth of the courses that they would like to have one each year.

Consequently, the postgraduate work will go on this coming year as before, only better than it has been in the past. Several suggestions for improving the courses were made at the dinner, and these will be incorporated in the plans for next fall. With a better understanding between the faculty members of the College of Medicine and the practicing physicians in Iowa, better courses will follow.

The programs for nine district meetings were planned by the Speakers Bureau during the year. A program presenting both sides of the pertinent subject of socialized medicine was prepared and presented first in Waverly, at which time it was approved by the Committee on Medical Economics. It was given again later at Mason City, but a third meeting at which this program was scheduled had to be postponed because of bad roads and weather in December. This program is planned for several meetings in the early part of 1935.

We arranged one interprofessional group meeting, and six other group meetings, but our real pride lies in the fact that we arranged scientific programs for sixty county medical society meetings. An exchange type of program was featured this year, and found to be very successful. Three men from one county were asked to prepare twenty minute talks to be presented before a meeting of a nearby county medical society. Quite often the entire membership of the county society was invited to the meeting at which their chosen representatives spoke, and in this way a better friendship and understanding was furthered among the members of the two societies. The county whose program had been arranged thus was then called on for three men for some other meeting, and in that way different contacts were established. The talks for these programs were carefully worked out and presented, and reports indicated that the meetings were always most successful. Ninety-three men were used on these programs.

Eighteen clinics were held in various parts of the state during the year—of these sixteen were chest clinics, sponsored by the Iowa Tuberculosis Association. The Speakers Bureau cooperated in the arrangements for these clinics and in the plans for the evening scientific programs which accompany these



	MEETINGS				SPEAKERS			
Adair.....	S(1)			PG(6)				
Adams.....	C(1)			PG(7)				
Allamakee.....				PG(1)				
Appanoose.....		L(1)		PG(1)		L(1)		
Audubon.....								
Benton.....								
Black Hawk.....				PG(2)	S(3)			R(1)
Boone.....		L(1)		PG(22)	S(2)			
Bremer.....	S(1)			PG(8)	S(5)		PG(1)	
Buchanan.....	S(1)	L(1)				L(1)	PG(1)	R(1)
Buena Vista.....	S(1)			PG(1)				
Butler.....				PG(1)	S(1)			
Calhoun.....						L(1)		
Carroll.....		L(1)						
Cass.....	S(2) SC(1)	L(1)		PG(1)				
Cedar.....								
Cerro Gordo.....	SC(1)	L(1)	D(1)		S(1)	L(2)		R(4)
Cherokee.....								
Chickasaw.....				PG(12)				
Clarke.....				PG(7)				
Clay.....								
Clayton.....	S(1)			PG(2)				
Clinton.....				PG(3)		L(1)		
Crawford.....		L(1)						
Dallas-Guthrie.....	S(2)				S(2)			
Davis.....	S(1)	L(1)		PG(5)				
Decatur.....	C(1)			PG(6)				
Delaware.....	S(2)			PG(5)				
Des Moines.....	S(3)			PG(5)	S(3)			
Dickinson.....	S(1)				S(3)			
Dubuque.....		L(1)		PG(45)	S(5) SC(1)			R(4)
Emmet.....	S(1)							
Fayette.....		L(1)	(D1)	PG(3)				
Franklin.....								R(1)
Floyd.....	SC(1)		D(1)	PG(9)	S(3)			
Fremont.....	SC(1)							
Greene.....						L(1)		
Grundy.....	S(1)	L(1)	D(1)					
Hamilton.....	S(1) SC(1)							
Hancock-Winnebago.....			D(1)		S(1)			
Hardin.....	S(4)							
Harrison.....								
Henry.....	S(1) SC(1)	L(1)		PG(15)				
Howard.....				PG(5)				
Humboldt.....	SC(1)	L(4)		PG(7)	S(2)	L(1)		R(1)
Ida.....								
Iowa.....	SC(1)							
Jackson.....	S(1)			PG(4)				
Jasper.....	S(2)	L(2)		PG(4)	S(3)	L(2)		R(1)
Jefferson.....	SC(1)	L(2)		PG(8)	S(1)			
Johnson.....					S(6) SC(2)		PG(24)	R(5)
Jones.....		L(1)						
Keokuk.....	SC(1)			PG(13)				
Kossuth.....		L(2)		PG(6)	S(1)			
Lee.....				PG(19)	S(2)			R(2)
Linn.....		L(1)			S(3)			R(1)
Louisa.....					S(1)			
Lucas.....								
Lyon.....								
Madison.....	S(2)			PG(3)	S(1)	L(1)		R(1)
Mahaska.....				PG(23)	S(3)	L(1)		R(1)
Marion.....				PG(7)		L(2)		R(1)
Marshall.....	S(1)	L(2)			S(1)	L(1)		
Mills.....		L(1)						
Mitchell.....				PG(1)				
Montgomery.....		L(1)		PG(6)				
Muscatine.....				PG(2)	S(1)			
O'Brien.....								
Osceola.....	SC(1)							
Page.....	S(1)			PG(6)	S(3)			
Palo Alto.....	SC(1)	L(1)		PG(7)		L(1)		
Plymouth.....								
Pocahontas.....				PG(8)				
Polk.....	C(1)	L(9)			S(34) SC(14)	L(17)	PG(9)	R(10)
Pottawattamie.....						L(2)		R(1)
Poweshiek.....	S(2)	L(6)	D(1)					
Ringgold.....	S(2) SC(1)			PG(4)				
Sac.....								
Scott.....	S(2)			PG(39)		L(1)		R(1)
Shelby.....								
Sioux.....								
Story.....	C(1)				S(1)	L(1)		R(1)
Tama.....								
Taylor.....	SC(1)	L(1)		PG(2)		L(1)		
Union.....		L(1)		PG(14)	S(4)			R(2)
Van Buren.....	S(2) SC(2)			PG(2)	S(1)			
Wapello.....	S(1)			PG(25)	S(6) SC(1)	L(1)		R(1)
Warren.....				PG(1)	S(1)	L(1)		
Washington.....					S(1)	L(1)		
Wayne.....	SC(1)	L(2)		PG(2)				
Webster.....				PG(13)		L(2)		R(3)
Winnebago.....	SC(1)	L(2)		PG(9)	S(2)		I(1)	
Woodbury.....	S(1)		D(1)		S(4)	L(2)		R(2)
Worth.....	S(1)							
Wright.....	S(1)		D(1)	PG(2)				R(1)
Out of State.....				PG(28)	S(5)		PG(11)	

clinics—both of which are held as a regular meeting of the county medical society.

We were asked to send speakers for fifty-four lay meetings, and we used forty-one different men for these calls. The reports we received on these speakers were uniformly excellent, and the list of men upon whom we can call is growing much larger.

Another point in our program of educating the public in the problems of health is our radio talks, given weekly over the two state educational stations—WOI at Iowa State College, Ames, and WSUI at the State University of Iowa, Iowa City. Forty-seven men have cooperated with us in preparing these talks. Many requests for copies of these talks continue to come in; these copies are prepared in the office and sent out to anyone requesting them. We continue to be indebted to Dr. J. F. Edwards at Ames and to Dr. M. E. Barnes at Iowa City for their cooperation at these two radio stations.

Our third project in the way of public health education consisted of our cooperation with the Woman's Auxiliary of the Iowa State Medical Society in the conduct of their first annual health essay contest. This contest was open to students in the ninth, tenth, eleventh, and twelfth grades. Several money prizes were given for the twenty best essays on the subject of "Health and How to Maintain It." The winner of first place was also given a trip to Ames to broadcast her essay on one of our regular periods over WOI. Essays were entered from students in all of the high school grades and from high schools in all parts of the state. This is one of the best ways of reaching the youth of the state and the Speakers Bureau is glad to assist in this important project.

In order to give you an idea of how we have covered the state with our activities, we have prepared the following chart, which shows the different counties, the meetings held in each county, and the speakers drawn from each. The first column shows the number of scientific programs given, designated by the letter S. C means that a clinic was held, and SC means that both a clinic and a scientific program were presented. Lay meetings are shown by the letter L; district meetings by a D. The number of men attending postgraduate courses from any county is shown by the letters PG with the number following.

In the second division of the chart the localities of the speakers are shown. The letter S with a figure following shows the number of men from that county who have presented scientific talks for some medical meeting. The letter L shows the number of men who have given talks to lay audiences. The men who have helped present postgraduate courses are designated by the letters PG with the number from each county, and those men preparing radio talks are indicated by the letter R.

In conclusion, may we present our financial statement, first for the year of 1934, and then for the five years of our existence.

Receipts from Postgraduate Courses in 1934.....	\$4,335.50
Travel Expense Refund.....	15.40
From Dues .....	1,200.00
	<u>\$5,550.90</u>

#### Disbursements for 1934

Travel Expense .....	\$ 641.17
Printing and Stationery.....	62.48
Postgraduate Course Expense.....	1,543.57
Office Supplies .....	130.32
Radio Talks .....	62.25
Salary .....	1,712.00
Telephone and Telegraph.....	91.83
Miscellaneous .....	72.68

Surplus for 1934.....\$4,316.30

Total Receipts 1930 through 1934.....1,234.60

1930 .....	\$ 2,780.00
1931 .....	3,939.34
1932 .....	2,805.58
1933 .....	4,850.70
1934 .....	5,550.90

Total Disbursements.....\$19,926.52

1930 .....	\$ 306.26
1931 .....	3,949.97
1932 .....	5,855.70
1933 .....	3,744.06
1934 .....	4,316.30

Total.....\$18,172.29

Total Surplus.....1,754.23

In 1933 and 1934, the Speakers Bureau Committee was allowed \$100.00 per month from the budget, or a total of \$2,400.00. Our surplus of \$1,754.23, if subtracted from this allowance, shows that in the five years of the bureau's existence, it has cost the State Society only \$645.77. The committee is very proud of this record, and believes the activities of the bureau would have been worthy of even greater expenditures, and that the profession itself would have been the gainer many times over. We shall endeavor to keep this work self-supporting, and at the same time offer to the members of the State Society the best possible postgraduate instruction at the lowest expense possible.

Daniel J. Glomset, Chairman

Dr. Spilman: I move that the report of the Speakers Bureau Committee as published in the handbook be approved.

*The motion was regularly seconded, put to a vote and carried.*

President Harkness: The next is the report of the Committee on Professional Relations. Dr. Watson.

#### REPORT OF COMMITTEE ON PROFESSIONAL RELATIONS

To the Council:

The Committee on Professional Relations originally began as a joint committee with the Iowa Pharmaceutical Association. The activities of this first committee proved so satisfactory in bringing about better cooperation between the professions that it was felt that it would be a good move for the committee to be enlarged to include the other allied professions. Accordingly, the House of Delegates adopted the following resolution in 1932:

*Be It Resolved*, That the State Pharmaceutical Association Joint Committee be continued as a standing committee of the Council and its powers and duties be enlarged to include all proper professional groups; and that the said committee shall be known as the Committee on Professional Relations.

This committee cooperated with any group in the state interested in forming an interprofessional organization.



The Professional Relations Committee during the past year has worked in conjunction with the Committee on Public Policy and Legislation in the interest of proposed legislation. These committees have worked unselfishly together, no boundary line being imposed, which makes the work of the Professional Relations Committee rather hard to evaluate. The report of the Committee on Professional Relations will include all activities pertaining to interprofessional organization.

The Committee on Professional Relations and the Committee on Public Policy and Legislation held a joint meeting on December 9 in Des Moines. Members of the medical profession from all over the state who were interested in interprofessional organization were invited, as well as representatives of the four allied professions—nurses, veterinarians, pharmacists and dentists. The purpose of the meeting was to discuss the ways in which the various professions could be of mutual aid and the possibilities of organizing a state wide interprofessional group. Each profession and every section of the state was well represented. The various representatives expressed the wish of their professions to cooperate with the other groups. While it was decided that no formal state-wide organization could be effected at this meeting, since a matter of this kind would have to be voted on by each professional group at its annual meeting, it was felt that the legislative committees of the various groups should work together during the coming legislative session in the interests of public health.

These committees did work together, holding three meetings. One was held on December 9, at which time the Legislative Committee of the State Society advised that the county medical societies were to be urged to hold county meetings to which their local legislators would be invited. If it met with the approval of the other groups, they would further be urged to invite the members of these other professional groups to this meeting and consider organizing a local interprofessional group for the purpose of promoting desirable public health legislation. The other legislative committees favored this suggestion and said they would advise their members to cooperate.

Reports received in the State Society office indicated that twenty-three counties held such group meetings and that of this number, ten formal interprofessional groups were organized. At least five other such groups were organized in previous years. Legislators were present at these meetings and an opportunity for the presentation of the legislative interests of all five groups was provided.

Two subsequent joint meetings of the legislative committees of the five professions were held, at which time public health measures and the individual legislative interests of the various groups were discussed. At the meeting on December 17, 1934, the following resolution was drawn up, which was to be submitted to the governing body of each of the five professional groups at their annual meetings for approval and adoption.

*"Resolved, That three members of the Legislative Committee of the.....Society shall be empowered to become part of an advisory council to be known as the Iowa State Interprofessional Health Association. This body will consist of three members of the legislative committees of each of the allied professions—veterinarians, nurses, dentists, pharmacists and physicians. The purpose of this Association is to promote friendly relations and cooperation between these various professions and to protect the public in matters pertaining to health."*

It was agreed that this resolution would have to be adopted by each of the five professional groups before plans for the formal set-up of a State Interprofessional Health Association could be made.

At the present time, this resolution has been presented at the state meetings of both the Iowa Veterinary Association and the Iowa Pharmaceutical Association and has been adopted by both. The Iowa State Dental Society meets at the time of our annual meeting and the Iowa Association of Registered Nurses meets in the fall.

Late in February this committee sent out a questionnaire to each county medical society, requesting information on what had been done in the way of organizing interprofessional groups in that county and the attitude toward such an organization, both local and state. Information was received from thirty-seven counties, in twenty-five of which interprofessional meetings had been held. Meetings have been held in nine of the eleven Councilor districts, which speaks for a state-wide interprofessional consciousness. Only three reports were distinctly unfavorable to such organization. The data gathered from these reports reflects in most cases a favorable attitude, even on the part of the counties where no meetings have been held. The reports form a rather interesting collection and, in many cases, there is discernible, between the lines, the sad story of a lack of harmony within the county society fold. This type of situation we can only deplore until some more happy solution is volunteered, but it is inimical to the cause of interprofessional relations.

Your committee believes that this idea of interprofessional organization, which has been promoted by a Council committee for a period of years, is being received with favor among the medical and allied professions. The Committee on Professional Relations, as a committee of the Council, submits this resolution to the House of Delegates for consideration and recommends its adoption. This resolution has been approved at a joint meeting of the Board of Trustees and the Council and the Committee on Public Policy and Legislation has requested that it be presented to the House of Delegates by our committee.

*"Resolved, That three members of the Legislative Committee of the Iowa State Medical Society shall be empowered to become part of an advisory council to be known as the Iowa State Interprofessional Health Association. This body will consist of three members of the legislative committees of each of the allied*

professions—veterinarians, nurses, dentists, pharmacists and physicians. The purpose of this Association is to promote friendly relations and cooperation between these various professions and to protect the public in matters pertaining to health."

E. J. Watson, Chairman  
R. A. Becker  
John Hanna

Dr. E. J. Watson: Mr. Chairman, the report will be found on pages 35 and 36 of the handbook. The primary objective of this report is that of securing an expression from the various professions of their attitude toward the interprofessional relations idea. I shall read the resolution which we submitted to get an expression from the various professions.

"*Resolved*, That three members of the Legislative Committee of the Iowa State Medical Society shall be empowered to become part of an advisory council to be known as the Iowa State Interprofessional Health Association. This body will consist of three members of the legislative committees of each of the allied professions, veterinarians, nurses, dentists, pharmacists and physicians. The purpose of this association is to promote friendly relations and cooperation between these various professions and to protect the public in matters pertaining to health."

I move that the report of the Committee on Professional Relations as published in the handbook be approved and that this be interpreted to mean the adoption of this resolution.

*The motion was regularly seconded.*

President Harkness: It has been moved and seconded that the report of the Committee on Professional Relations, including this resolution with regard to the allied professions, be adopted. Are there any remarks?

Dr. R. W. Stahr: I should like to offer a substitute resolution for the resolution on page 36 of the handbook. I am not going into a discussion of this but will simply present it to you for your consideration.

"*Whereas*, Protection of the public health and our professions in the legislative field is difficult; and

"*Whereas*, Interprofessional organization has been widely discussed; and

"*Whereas*, Two professional organizations have acted favorably on the idea; and

"*Whereas*, The medical profession fostered the movement; therefore be it

"*Resolved*, That five members of the Iowa State Medical Society be appointed by the President and approved by the House of Delegates to represent the Society on the central board of a state-wide interprofessional organization to be known as the Iowa State Interprofessional Health Association; and be it

"*Further Resolved*, That this group with the president and secretary in an ex-officio capacity be the Public Policy and Legislative Committee of the Iowa State Medical Society; and be it

"*Further Resolved*, That the following plan be

set up immediately in our own profession and be presented to the other professions for action:

"The state shall be divided into five large districts with a representative on the central board from each district from each of the five professions; these representatives to be elected by their respective state organizations. Further divide the state into small districts of not more than five counties, using senatorial districts as a basis; the district committee again to be made up with one member from each of the five professions; said committee to be selected by the Central Board members.

"Further divide the districts into county units having a committee of five, one member from each of the five professions, to be selected by the district committee.

"The Central Board shall have authority after consulting with their various state units to approve and put in operation desired projects as they may arise.

"The Central Board shall have entire authority to employ or discharge such full-time or part-time aids as they deem necessary to make the plan effective; and direct their activities, which must have the approval of the Central Board before they may proceed.

"The Central Board shall have further authority to refuse to sponsor projects which do not meet the approval of the majority of the groups represented (nothing in the above statements shall be construed to mean that any profession cannot individually undertake any legislation that it may see fit to sponsor); and be it

"*Further Resolved*, That any project undertaken by the statewide interprofessional group shall be strictly on a nonpartisan basis and limited to the best interest of the public health and the five organizations concerned; and be it

"*Further Resolved*, That the House of Delegates authorize the Board of Trustees to appropriate as much money as was spent on legislation between May 1, 1934, and May 1, 1935, to carry on the work of establishing and maintaining this organization during the coming year or until a permanent financial agreement can be reached between the professions represented."

I submit that as a substitute resolution.

*The substitute resolution was regularly seconded.*

President Harkness: Dr. Stahr, for the information of the Chair, you say here "five members of the Iowa State Medical Society be appointed by the President and approved by the House of Delegates to represent the Society on the Central Board" and "that this group, with the President and Secretary in an ex-officio capacity, be the Public Policy and Legislative Committee." You would increase our own Public Policy and Legislative Committee and it would then be a committee of seven?

Dr. Stahr: Yes.

President Harkness: And five of them would be the members who would represent the Society in this interprofessional association, and this plan is to be set up in our own profession?

Dr. Stahr: Yes.

President Harkness: It does not refer to what the allied professions may set up? I am asking for information so I can clarify it in the minds of everybody here.

Dr. Stahr: We can go no further at present than to set it up in our own profession and then present it to the others for their action.

Dr. Watson: Does this mean that out of a total of 625 on the committees, five are elected by our House of Delegates? Is that the representation we have, five out of 625 elected by our House of Delegates?

President Harkness: This is the first time the



Chair has seen this resolution, so I can't interpret that part of the question for you. Since you have proposed this resolution, Dr. Stahr, can you answer that question?

Dr. Stahr: That is exactly what it means. This House of Delegates can pick five out of its membership to represent us and to pick down through the various districts and various counties the men who will function for this type of work. That is the idea.

President Harkness: In other words, the personnel of this group will be picked from above down?

Dr. Stahr: Except that this House of Delegates elects the head.

President Harkness: The five?

Dr. Stahr: Yes.

Dr. T. F. Suchomel: How much money was spent on legislative matters in the time that is referred to in the resolution?

Dr. Fay: Approximately \$7,000.

Dr. E. E. Shaw: Does that mean that, under these circumstances, in a non-legislative year, which is never an expensive year, we are to spend the same amount of money as we do in a legislative year, that is \$14,000 in two years?

Dr. Stahr: Mr. President, there would be no way that I know of to intelligently interpret how much it would cost to set up this organization. Regardless of what it may cost, I think it would be worth it. The initial cost would probably be more than it would be later on, and the other professions can be brought into this thing with their own financial responsibilities. We have no desire here to discredit our Legislative Committee, but we believe you can have a more efficient organization because we will be better organized among ourselves in a political and economic fashion. The function of this organization would be to look into the question of candidates before they are elected to office and not after they are elected to office.

Dr. Suchomel: According to your address this morning I understood that the Iowa Veterinary Medical Association and the State Pharmaceutical Association had already accepted the plan of the allied professional group. Is that the plan that is submitted here in this resolution?

President Harkness: That is not the substitute motion. The resolution as offered by Dr. Watson has been approved by the Iowa Pharmaceutical Association and also by the Iowa Veterinary Medical Association.

Dr. Suchomel: In other words, if we accept the substitute resolution we are going to put into operation an entirely different set-up, which will necessitate the groups that have already come in, changing their set-up? I think we would be trying to be a little bit dictatorial to the other group and I don't think we are ready for any dictatorial powers yet. I should like to ask the sponsors of this substitute resolution what, if any, effect or what, if any, action is planned if one, two, three or four of the other allied groups reject this plan after it has been changed, if we adopt the substitute resolution.

Dr. Stahr: In answer to your last question, I don't

think there is any way in which we can make these professions come in with us, but I would like to ask what specific plan of procedure has been submitted to the pharmaceutical and the veterinary associations for action, towards setting up a statewide interprofessional organization.

Dr. Watson: Two professions have adopted this resolution and appointed their representatives to act with representatives of the other professions in developing the interprofessional organization. They have already appointed their representatives under this resolution.

Dr. Geo. C. Albright: If I understand the substitute motion correctly, if adopted it will abolish the Legislative Committee, will it not?

Dr. Stahr: It will be the Legislative Committee.

Dr. Albright: The Legislative Committee as it now exists would be abolished?

President Harkness: There would be a Public Policy and Legislative Committee of five.

Dr. Albright: But our present Committee on Public Policy and Legislation will automatically be abolished by this resolution, will it not?

President Harkness: Yes.

Dr. Albright: I rise to a point of order, that the substitute motion is out of order because it involves a change of By-Laws which has not been presented in due form to this House of Delegates.

President Harkness: The Chair rules that your point is well taken, Dr. Albright. I sustain you in your point of order.

Dr. Watson: Mr. Chairman, I call for a vote on the question before the house.

Dr. Stahr: Mr. President, may I call to your attention the fact that this substitute resolution states specifically that this committee will be the Committee on Public Policy and Legislation?

President Harkness: But you have changed the number.

Dr. Stahr: I didn't change the committee; I changed the number.

President Harkness: The number is specified in our By-Laws.

Dr. A. D. Woods: It seems to me we ought to have more discussion of this thing. It seems to me there are a great many delegates here who don't know what is going on, and I am one. I should like to know what this is all about. I don't think we ought to dispose of this thing off-hand.

President Harkness: I wonder if the Chair can say something that might smooth the waters a little bit. We are, I think, a good many of us, kind of sitting over a keg of dynamite. We are expecting something to blow off, and it hasn't blown off. This inter-allied professional group as an organization must necessarily adopt its own course of procedure and its own policy. We have the approval of two organizations in forming an inter-allied professional group. They have adopted a resolution which was fostered by this Society or by the officers of this Society, if you please. It seems to me that the business-like way to do this is for this House of Delegates—

and I realize that in occupying this Chair I want to be non-partisan—to adopt the original resolution. Then if this House of Delegates wishes to recommend to this organization a plan of organization, as a suggestion, all well and good. However, how can we set up a plan of organization for an association that does not as yet exist? That is only a suggestion from the Chair, as I see it.

I think you are perfectly right, Doctor. We want a free discussion on this. Are there any other remarks?

Dr. F. F. Agnew: A few of us came in late, believing the meeting was to be at four. I for one didn't hear the motion as originally read, and I think there are others that didn't hear it. Might that be read so we will know better what is being talked about?

President Harkness: Will the Secretary read the resolution of the Professional Relations Committee?

Secretary Parker: "RESOLVED, That three members of the Legislative Committee of the Iowa State Medical Society shall be empowered to become part of an advisory council to be known as the Iowa State Interprofessional Health Association. This body will consist of three members of the legislative committees of each of the allied professions, veterinarians, nurses, dentists, pharmacists and physicians. The purpose of this Association is to promote friendly relations and cooperation between these various professions and to protect the public in matters pertaining to health."

Dr. O. P. Morganthaler: Is that the resolution that has been adopted by the pharmacists and the veterinarians?

President Harkness: That is.

Dr. Fred Moore: Mr. Chairman, I should like to ask for some information in regard to this resolution which was presented by Dr. Stahr. Does that provide specifically for an interprofessional organization, or does it merely outline a different set-up for our old legislative procedure?

Dr. Stahr: This is a set-up not only for our legislative procedure but to be suggested to other groups for their action. If I may have the floor, I will talk on it a little bit.

President Harkness: You have the privilege of the floor.

Dr. Stahr: It is our sincere belief that there are so many problems facing us in the immediate future, we should have a compact and tight organization, minority organization, if you want to call it such, but one which will act efficiently when acted on through the central source. We know that the objectives of the four other professions are essentially our own, that is in the field of public health and professional protection. We know that if this thing can be set up we will have a much better organization within our own organization, because this set-up gives this House of Delegates the privilege of approving the five members, picking the members for this Committee on Public Policy and Legislation, and it gives them complete authority to pick the ones that they think will work in the various districts and in the

various counties. In other words, our idea is simply this, that this minority group, of which we are only a small part, has to be organized to function, not after election but before election. I have no doubt that many of you know more about what goes on in the legislative halls than I do. From what one can read in the papers regarding the discussions by various members of the House and Senate, I think some of them deserve a mighty good beating at their own home plate. Although many doctors look upon politics as being out of their field of endeavor, it is our firm belief that if we are going to have any protection, we are going to have to interest ourselves in politics, and plenty, because, regardless of what you may say, I still believe that the only thing the legislator thinks about at all, that really means business, is the question of whether he is going to get the votes in the next trip.

Dr. Moore: Mr. Chairman and Members of the House of Delegates: I want to speak in support of the resolution which has been presented in the report of the Professional Relations Committee. It has already been ruled by the Chair that this resolution as a substitute is out of order. It is perfectly right that this thing should be discussed, and discussed freely, and thoroughly understood by the members of this House before expressing their approval or disapproval of the resolution as presented by the Professional Relations Committee.

I take the floor to discuss this because I have had it from all sides for the last three months or longer; I guess longer than that, for about four or five months. In our work in the Legislative Committee we have been beset with this question ever since last fall. Now, there is a great deal of virtue in it, but its value to this organization and to every organization which may be engaged in interprofessional activities lies, in a large measure, in two things: first, the way in which it is developed. If it is not developed as the result of the common counsel of authorized representatives of the several organizations, you will have a bastard organization which will be responsible to no one. As a matter of fact, the other organizations, I am confident in my own mind, will look with favor upon the opportunity for organization as is presented in the report of the Professional Relations Committee. I feel that I can say with absolute certainty that they will not only look with disfavor upon the type of organization that is outlined in this substitute motion but they will not permit themselves to be drawn into and tied into a tight and compact organization, in which some few chosen people are going to assume responsibility for, direct the interest of and express themselves for the several professional organizations in this state.

One can't discuss this without getting into legislative interests. We of your Legislative Committee were convinced last summer, after analyzing the situation, that the legislative influence and the power of this organization lie in the county units of this Society. Our experiences since then have only sustained that viewpoint. We know that to be a fact



now. We are just as certain that there is no organization in the state of Iowa that can exert the influence upon the legislators of the state of Iowa, equal to that of the medical profession, if the county units of this organization will interest themselves, organize themselves and express themselves. There isn't any other organization in the state that can exert the influence upon the legislators of the state of Iowa that our own state society can. If our organization moves with representatives of the other organizations and joins with them, in common counsel with their authorized representatives, to develop the type of interprofessional organization which all of them will approve and in which all of them have a voice, then we will have a type of organization which would meet the general support of the several organizations.

It is the opinion of your present Legislative Committee that any interprofessional organization in which we should be engaged, should not be a tight and compact sort of thing in which we do not have a free voice and free movement. It is our belief that any interprofessional organization which may be developed should be of the opposite type, a rather loose type of organization. There is one state professional organization which has been organized for several years and has been very effective. It is known as a state interprofessional organization, makes no reference to health, and includes accountants, architects and several other groups, along with those interested in health. That is in the state of Oregon.

It was the privilege of some of the members of your Legislative Committee just recently to have a conference with the executive of the organization of that state, and it was very interesting, indeed, to have him tell how their organization came about. It so happened that it came out of exactly the same sort of thing that is expressed in the Professional Relations report. It came out of a simple resolution in which they advised that three members of each of their societies should be delegated to meet with other representatives of other organizations, and discuss and develop such organization as they may see fit, or might have seen fit at that time.

They developed a loose type of organization which does not carry a big overhead. The only thing they carry in common is that during the time the legislature is in session they put in the state house their desk, their own telephone and their own secretary. It is the business of that secretary to study all the legislation which is turned in to the legislature and report back to each organization any bill or measure or resolution which is introduced which affects the interest of any one of those organizations. Having carried that information back to the various societies which may be interested, that secretary has performed his function for the interprofessional organization. Then it is up to each of the organizations to defend for themselves, in their own way, as they may see fit, any legislation which is introduced to which they object.

It is the conviction of your Legislative Committee

that, if this organization were tied in tight, as this proposed substitute resolution suggests, and we turned our legislative interest over to an interprofessional group in which we would lose, in considerable measure, definite control, we would be, in time, greatly embarrassed, our interest would be embarrassed, and our accomplishments would be much less. Your Legislative Committee has had frequent contacts with representatives of all these other organizations throughout the past several months, and we are thoroughly convinced that the proper basis of approach to interprofessional activities is the kind of approach that is outlined in the report of the Professional Relations Committee.

If there are any questions which you would like to put to me in regard to our experiences of the past several months in this connection, I shall be very glad to try to answer them, Mr. President.

Dr. W. R. Brock: I think it would be a very fine thing to have an interprofessional organization such as Dr. Jepson started down in his county, and which we up in O'Brien County and Sioux County perfected. I think we started right. However, I do know from what you have said here and admitted, that you are going to start from the wrong point. Our American Medical Association and our state association is organized from the county up, but here I hear that you are going to start at the top and organize down. If you are going to do that, I believe it is going to complicate the thing so that you are never going to be able to get anywhere. I think the thing for us to do is to organize our own counties and carry the organization up, the same as we do in the medical profession alone. I don't see how this move can be legal or active unless you change the By-Laws of the Constitution. If you do that, it has to lay over before it can be accepted and become law. Our President has very graciously announced that, in his opinion, this substitute motion is out of order. If it is out of order, it doesn't exist and, therefore, there is nothing to talk about.

President Harkness: For your information, the Chair did rule that motion was out of order and, as you say, there is no substitute motion before the House, there having been no appeal taken from the decision of the Chair. However, in order to clarify the atmosphere, I have allowed this discussion to go on, including those proposals that were in the substitute motion, so that the Chair could feel that every delegate had had a chance to know what it was all about. There has been considerable discussion. The Chair has taken little leeway in his prerogatives here. So, before we vote on the resolution, we should be sure that everybody has heard all that he wants to hear. Shall the main question be put now?

*The question was called for.*

President Harkness: Those in favor of having the main question put (this is not voting on the question but simply on whether the question should be put) signify by the usual sign; those opposed. We will now vote on the resolution as proposed in the report

of the Committee on Professional Relations. All those in favor signify by the usual sign; those opposed. *It is carried.*

President Harkness: We will now hear the report of the Cancer Committee. Dr. Jepson.

## REPORT OF THE CANCER COMMITTEE

### Organization

The efforts of the committee during the year have been largely directed toward formulating plans for future activities and organizing to carry them out. The committee has formulated and adopted the following plan of organization:

1. Each committee member (each councilor) is in charge of the activities in his own district, which implies that he will, if he so desires, appoint a chairman in charge of the work in each county.

2. The appointment by the councilor of such physicians in his district as may be willing to appear before lay audiences, nurses' groups, and county medical society meetings, and present such phases of the cancer problem as may be suitable for each type of meeting.

3. The cooperation of the members of the committee in procuring places on the programs of meetings suitable for the dissemination of information concerning cancer.

### Outline of Activities

The committee has formulated and adopted for its guidance the following outline of activities:

1. That of promoting such interest in this disease on the part of the profession, as shall keep it abreast of the current thought of the day in its:

- (a) Prevention when possible.

- (b) Management.

2. That of getting information to such of the lay public as may be sufferers or prospective sufferers from cancer and to those, whose possession of this knowledge might benefit, not only themselves, but particularly the public, i. e., nurses and students of biologic science.

3. That of promoting the establishment of facilities for the diagnosis and management of cancer in the various populous centers of our state where the same is practical.

### Means of Accomplishing the Foregoing Objects

Contact with the medical profession will be sought through a staff of speakers approved by the committee—these speakers will be willing to appear on programs of county and district societies, either upon request of the local society or the educational bureau.

### Instruction to the Lay Public

This problem resolves itself into (a) instructors and (b) recipients of the instruction.

1. Instructors, with few exceptions, must, of necessity, be recruited from the medical profession and in some instances the nursing profession; and the selection should, insofar as possible, be based upon their

ability to present the subject to the public in such a manner that the audience may grasp the salient points.

2. Means of gaining contact with the public is, of course, an outstanding problem in the solution of which two methods suggested themselves:

- (a) That of attempting to organize a society largely of lay people devoted to the dissemination of knowledge relative to cancer. This would be the ideal means, but it is largely out of the question by reason of the difficulties which would be experienced in its organization.

- (b) That of requesting the Iowa Federation of Women's Clubs to function as a means of contact with the public through its Committee on Public Health in each county and district. This appears feasible, as they have their organization ready to function, and it would avoid duplication of activities. (This latter plan was adopted. The Iowa Federation of Women's Clubs, through its president, Mrs. Eugene Henely of Grinnell, Iowa, has kindly consented to grant their fullest cooperation by providing a place on the programs of county and district meetings from time to time when it can be arranged.)

As gratuitous literature bearing upon cancer is no longer available from the American Association for the Control of Cancer, and as we have no funds out of which to defray the expense of securing such needed literature, another means must be sought. It is believed that our State Department of Health may be willing to supply the profession and the public with such literature as may be deemed absolutely necessary, as part of its health activities. Such was the impression gained in an informal conversation with the Commissioner of Health, Dr. W. L. Bierring. At least the Committee on Cancer Control may feel assured of the cooperation of the Department of Health, insofar as lies in its power. It is conceived that such literature need not exceed three or four pamphlets, one of which would cover matters of general information and two or three covering special phases which would pass from the department to the patient upon request of the physician.

There is yet another phase of education which it is believed should receive consideration, namely: that of seeking to have instructors of classes in biology in high schools and colleges call the attention of their students to possible deviation from the normal and the development of malignancy at the termination of their courses, in which the study of normal cell behavior has been completed.

A special committee, consisting of Dr. A. W. Erskine, Dr. F. P. McNamara and Dr. Wm. Jepson, has under consideration the advisability of attempting to organize services for the diagnosis and treatment of cancer at suitable locations throughout the state, in accord with the minimum requirements of such organizations as outlined and set forth by the American College of Surgeons. This committee has not been able so far to formulate a report based upon the study of this problem.

It is realized by your Cancer Committee that, as



adopted, its outline of activities in dealing with the cancer problem of our state, represents what it deems should be done and the means which appear to it to be most practical in securing the desired results and not what it expects to accomplish at once or even in the immediate future for several reasons, among which may be mentioned the following as outstanding:

There are no funds from which any of the expenses can be defrayed. Thus while members of the profession will no doubt give willingly of their time in appearing upon the programs of professional and lay organizations, at times this cannot be done without expenses incident to travel, etc., and it cannot be expected that men would continue defraying these for long. Furthermore, while members of the profession, including your committee, will no doubt gladly give of their time in supervising these activities in the state, yet this, too, will involve expense for stationery, stamps, clerical help, etc., which may come to constitute a burden with the increasing activities of the committee. The absence of financial support will no doubt greatly hamper the activities of your committee, if not ultimately destroy its function. Your committee will welcome any aid the House of Delegates may contribute to the solution of this problem.

Respectfully submitted,

William Jepson, Chairman

Dr. William Jepson: Mr. President, I believe the gentlemen all have my report as printed in the handbook, and there is no reason why I should take up any more time. I should like to call attention to the Committee's closing remarks therein to the effect that the Committee is doing its work out of love, having not a cent to defray expenses, in any respect, and that fact may, as the activities grow, somewhat hamper its usefulness.

I move the approval of the report as published in the handbook.

*The motion was regularly seconded, put to a vote and carried.*

President Harkness: We now come to the report of the Board of Trustees.

#### REPORT OF BOARD OF TRUSTEES

House of Delegates, Iowa State Medical Society:

Your Board of Trustees submits its report for the year just passed with a distinct sense of appreciation for the fine spirit of cooperation with which they have been met by all members and officers alike. This spirit of cooperation, along with the improvement of financial conditions generally, has tended to lighten the burden of keeping within our income while carrying on the selected activities of the society. Several propositions, which were matters of policy or would create new activities have been sent back to their proponents with a statement of our limitation of action. Your trustees would call attention that legislative matters are not within the scope of their activities.

In carrying on its designated work the Board of

Trustees has met throughout the year. Two of our meetings were joint meetings with the Council. These meetings were helpful to us in carrying on the designated work of the society and in sensing more nearly the desires of the membership.

The budget plan on which the society has been operated for the past three years has been a distinct advantage and contributes no small amount toward enabling us to live within our income although "to live within our income" should not be our sole objective. To allocate funds to their proper department and spend efficiently is much more to be desired. From year to year the necessities of the situation change and to sense properly those situations and allocate sufficient funds should be our objective. In order that the requirement for an efficient, actively prosecuted program of legislative activity be carried out, it was necessary that we exceed the budget allowed for this purpose at the beginning of the year.

We finished 1934 with a deficiency of \$1,390.50 in the legislative committee allowance. To take care of the increased activity incident to a meeting of the General Assembly in 1935 the budget was increased to \$4,800 for this year. All other deficiencies in budgetary allowance were small and required minor changes for 1935.

The price we must pay for future freedom to practice our profession is continuous watchfulness by our legislative and medical economics committees. A failure to expend efficiently their allotted budget is not a saving but a loss. A financial gain by the Speakers Bureau one year should be corrected another year, either by lower fees collected for courses or by enhanced qualities of mental pabulum dispensed.

No effort or expense has been spared to make your JOURNAL the best of State Society organs. We believe the effort has been recognized and rewarded by advertisers as shown by an 18 per cent increase in advertising returns for 1934 over 1933. Betterment of financial conditions over the country should be reflected in larger returns for 1935. The yearly meetings of secretaries of constituent societies have been discontinued as an economy measure for several years. When this was used it served as a valuable means of arousing enthusiasm and dispersing information to those who are largely responsible for the county society meetings. The enthusiasm so generated is easily shown in the loyal support of the individual members.

It is recommended by the Board of Trustees that the ten dollar dues now in force be continued for the year 1936 in order to be able to conduct the activities of the State Society on the same high level.

In conclusion, your Board of Trustees would again point out that it is not within its scope to suggest or define the future policies of the State Medical Society. The above statement of possible activities as seen from their financial aspects we leave with you for consideration and pledge our earnest support to any program of activity which seems best to the House of Delegates.

John I. Marker

Dr. Fay: Mr. President, I move the approval of the report of the Board of Trustees as published on page 38 of the handbook of 1935.

*The motion was regularly seconded, put to a vote and carried.*

President Harkness: Report of the Delegates to the American Medical Association, Dr. Moore.

Dr. Moore: I will ask Dr. Thornton or Dr. Trey-  
nor to make that report.

#### REPORTS OF THE DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION

To the House of Delegates of the Iowa State Medical Society:

##### Cleveland Meeting

The following is a report of the sessions of the House of Delegates at the annual meeting of the American Medical Association held at Cleveland, June 11-15, 1934. The excerpts which are quoted from the various talks given at these sessions will, I believe, give you the thought of the meeting.

Speaker F. C. Warnshuis: Your Speaker has taken the liberty to suggest to your Secretary that announcement be made in the *Bulletin*, *The Journal* and the program that sessions of the House of Delegates are open to Fellows and to urge them to attend your deliberations. Many Fellows are under the impression that you sit in closed sessions. On many occasions, Fellows have stated that they wished they could attend your sessions and were greatly surprised when informed that they are more than welcome. A clearer understanding of organizational problems and activities will result if Fellows become more intimately familiar with the functionings of their House of Delegates. To that end the suggestion is made to encourage attendance by those whom you represent and, if need be, that the provision for the accommodation of visiting observers be enlarged.

President Dean Lewis: During the past year I have visited many societies and I find that the profession is troubled. They should realize that they provide the essential part of the care, and without their untiring effort and sacrificing service there would be no medicine, for medical knowledge demands the longest and most technical training of any profession. There should be no paths to follow and we would be lost on the unlighted, uncharted path of ignorance.

We should be concerned today with the quality of medical care. Cheap medicine is often the most expensive, and what is called expensive is often the cheapest. One of the heaviest duties now resting on the medical profession is to raise and maintain the quality. If the quality of medical care is to be high, we must have vision and exercise judgment at the beginning, and when I say beginning, I mean when the student is admitted to the medical school. Character should have a higher assessed value than marks alone.

There are two disturbing factors in medicine. First, many doctors and lay people condone advertis-

ing. Lay people should realize that advertising in medicine is pernicious, for advertising may wilfully deceive. Commercialism and advertising are among the most demoralizing things in medicine.

As a result of the depression, doctors have had a bad time financially and they may easily be exploited by lay people, both in hospital and in health insurance. The fate of the people as regards medicine will be determined in the ward, the home and the research laboratory.

I look with confidence to the members of the House of Delegates for the solution of the many problems that confront the medical profession. Those questions should be settled by the critical analysis of the facts and data presented and not influenced by passion or the emotions which the problems of the sick so often arouse.

We should remember that it is easy to say that the people are not getting sufficient medical care, but how shall it be provided? Those who practice medicine are always being told how to do it, but those who criticize them have usually had no experience in doing it and couldn't do it at all if called on to do so. We have the right to be proud of our achievements and we can best meet every challenge directed at us by carrying on without fear and with vision.

President-Elect Walter L. Bierring: During my training year as President-Elect, I have been more and more impressed with the basic spirit of democracy that governs our Association. With its ever widening influence, scientific and professional, the sovereign right of the individual member still reigns supreme, and this representative body, the House of Delegates, continues as the arbiter of the destiny and policies of organized medicine in America.

It needs no words of mine to say that this will be a historic session, because you are called on to consider medical problems such as have not been encountered before.

There are those without our Association who would speak with authority and much concern of our welfare regarding the solving of these problems. While we gladly listen for guidance from every available source, we are confident and deeply conscious of our ability to put our house in order.

With the evolution in technology, the development of industry and the political economic changes, modern society has come to expect a new order of medical service, different from that demanded a generation ago.

Your second great problem is concerned with the changing order of medical practice. Well meaning non-medical advisers have brought to you a variety of artificial remedial plans that are supposed to solve every phase of the problem. We well know that no single "rule of thumb" proposal or method will provide the remedy. The rendering of efficient and complete medical service is still largely governed by the individualistic relation of physician to patient. Furthermore, the practice of medicine is a profession and not a business or a trade.

It is also well recognized that the practice of medi-



cine in the crowded areas of New England and along the Atlantic seaboard is far different from that required in the rural and agricultural sections of the Mississippi Valley. Likewise, the activities of the medical practitioner in the southern states are not the same as those in the wide open spaces of the Dakotas and other western states.

It is sad to relate, that mighty forces have been at work to sow the seeds of discontent in the ranks of organized medicine and to destroy the faith in that leadership which is based on the sacred traditions of sacrifice and devotion to the idealism of medical service.

From all over this broad land the doctor looks to you, members of the House of Delegates, in fullest faith and confidence, not to solve the problem all in one day, but in your wisdom and in the spirit of unity and solidarity to point the way for each to follow gladly.

Items of interest from the report of the Secretary, Olin West:

#### Membership

April 1, 1934, 98,041. The names of 1,537 deceased members were removed during the year.

#### Fellowship

April 1, 1934, 60,714; April 1, 1933, 62,495. During the year 5,563 names were removed from the roster, while 3,782 were added. The net loss for the year was 1,781. Of those removed, the names of 789 were those of deceased Fellows; 1,202 had become ineligible for various reasons; 1,903 had failed to pay dues; 1,669 resigned. In most instances resignations were based on expressed desire to be relieved of the payment of Fellowship dues and subscription because of the unfavorable economic situation.

#### Reapportionment of Delegates

Under the provisions of section 3, chapter 1, of the by-laws it is required that a reapportionment of delegates shall be made every third year. The last reapportionment was made at the Philadelphia session in 1931 and it will therefore be necessary to make a new reapportionment at this session.

#### Medical Economics

Your committee does not recommend any plan but has abstracted from the pamphlet the following principles and suggests that they be followed by all constituent bodies of the American Medical Association as bases for the conduct of any social experiments that may be contemplated by them.

First: All features of medical service in any method of medical practice should be under control of the medical profession. No other body or individual is legally or educationally equipped to exercise such control.

Second: No third party must be permitted to come between the patient and his physician in any medical relation. All responsibility for the character of medical service must be borne by the profession.

Third: Patients must have absolute freedom to choose a legally qualified doctor of medicine who will serve them from among all those qualified to practice and who are willing to give service.

Fourth: The method of giving the service must retain a permanent, confidential relation between the patient and a "family physician." This relation must be the fundamental and dominating feature of any system.

Fifth: All medical phases of all institutions involved in the medical service should be under professional control, it being understood that hospital service and medical service should be considered separately. These institutions are but expansions of the equipment of the physician. He is the only one whom the laws of all nations recognize as competent to use them in the delivery of service. The medical profession alone can determine the adequacy and character of such institutions. Their value alone depends on their operation according to medical standards.

Sixth: However, the cost of medical service may be distributed, the immediate cost should be borne by the patient if able to pay at the time the service is rendered.

Seventh: Medical service must have no connection with any cash benefits.

Eighth: Any form of medical service should include within its scope all legally qualified doctors of medicine of the locality covered by its operation who wish to give service under the conditions established.

Ninth: Systems for the relief of low income classes should be limited strictly to those below the "comfort level" standard of incomes.

Tenth: There should be no restrictions on treatment or prescribing not formulated and enforced by the organized medical profession.

T. F. Thornton

#### Chicago Meeting

The delegates of the Iowa State Medical Society to the American Medical Association beg to submit the following report of the special meeting of the House of Delegates of the A. M. A. held in Chicago on February 16 and 17, 1935.

This meeting was held at the request of the Board of Trustees of the American Medical Association for the consideration of the social and economic policies of the Association as related to pending and proposed legislation, and for such other business as might be submitted.

The meeting was called to order by Frederick C. Warnshuis, speaker of the house, who in a brief opening address emphasized the importance of the matters under consideration and the desirability of free and full discussion of same. The attendance of delegates was surprisingly good, over 160 being registered.

Dr. J. H. J. Upham, chairman of the Board of Trustees, read an official statement for the board. This statement covered:

Sickness Insurance.

Changes in Nature of the Practice of Medicine.

Committee on Costs of Medical Care.

The Medical Advisory Board.

President Roosevelt's message of January 17, 1935, relative to employment insurance, federal aid to dependent children, the support of existing mothers' pension systems, appropriations for services for the protection and care of dependent children, additional federal aid to state and local public health agencies.

Plans for Health Insurance.

The Wagner-Lewis Bill.

They submitted the following questions for the consideration of the House of Delegates:

1. Shall or shall not the House of Delegates again declare its opposition to all forms of socialized medicines, federal or state?
2. What is the attitude of the House of Delegates toward the principles proposed by the committee on economic security appointed by the president of the United States?
3. Shall or shall not the House of Delegates of the American Medical Association reaffirm its opposition to the principle of the federal subsidies to individual states in relationship to the provision of the medical service?
4. Will the House of Delegates express its position relative to the provisions of the Wagner bill which places the control of medical affairs in the department of labor under a non-medical special board?
5. What attitude shall the House of Delegates take relative to the proposed sickness insurance legislation in the individual states as represented by the Epstein bill of the American Association for Social Security?
6. How may the American Medical Association initiate plans for still further improving the quality of medical service and for obtaining better distribution of medical service for all the people?

Following the submission of this report a number of resolutions were offered from the floor.

A very generous and full discussion of the report of the Board of Trustees ensued.

On motion, a special reference committee was appointed to crystallize the expressions of the delegates and to bring recommendations to the house for final action.

R. G. Leland, director of the Bureau of Medical Economics, and Wm. C. Woodward, director of the Bureau of Legal Medicine and Legislation, addressed the house. A general discussion followed which continued throughout the afternoon.

On Saturday morning the special session reconvened. Harry H. Wilson, chairman, read the report of the special reference committee which, after prolonged discussion, was referred back to the committee for redrafting. In the afternoon the redrafted report was unanimously adopted.

The following excerpts briefly summarize this report:

1. Your reference committee believing that regimentation of the medical profession and lay control of medical practice will be fatal to medical progress.
2. The primary considerations of the physicians constituting the American Medical Association are the welfare of the people, the preservation of their health, and their care in sickness, the advancement of medical science, the improvement of medical care, and the provision of adequate medical service to all the people.
3. We reaffirm opposition to all forms of compulsory sickness insurance, whether administered by the federal government, the governments of the individual states, or by any individual industry, community, or similar body. We reaffirm our encouragement to local medical organizations to establish plans for the provision of adequate medical care for all the people, adjusted to present economic conditions, by voluntary budgeting to meet the cost of illness.
4. The House of Delegates recognizes the necessity under conditions of emergency for federal aid in meeting basic needs of the indigent; it deprecates, however, any provision whereby federal subsidies for medical services are administered and controlled by a lay bureau. While the desirability of adequate medical service for crippled children and for the preservation of child and maternal health is beyond question, the House of Delegates deplores and protests those sections of the Wagner bill which place in the children's bureau of the department of labor the responsibility for the administration of funds for these purposes.
5. The House of Delegates condemns as pernicious that section of the Wagner bill which creates a social insurance board without specification of the character of its personnel to administer functions essentially medical in character and demanding technical knowledge not available to those without medical training.
6. The so-called Epstein bill we condemn as a vicious, deceptive measure.
7. There are now more than 150 plans for medical service undergoing study and trial in various communities in the United States. In the establishment of all such plans, county medical societies must be guided by the ten fundamental principles adopted by the House of Delegates at the annual session in June, 1934.
8. The House of Delegates would again emphasize particularly the necessity for separate provision for hospital facilities and the physician's services. Payment for medical service, whether by prepayment plans, installment purchase or so-called voluntary hospital insurance plans, must hold, as absolutely distinct, remuneration for hospital care on the one hand and the individual, personal, scientific ministrations of the physician on the other.



Many brief addresses followed, notably those of Walter L. Bierring, president of the American Medical Association; James S. McLester, president-elect; Austin A. Hayden, secretary of Board of Trustees; J. H. J. Upham, chairman of Board of Trustees, and others.

Many delegates expressed the opinion that this session was one of the most important ever held by the House of Delegates. The attendance of about 95 per cent of the total membership was noted. The membership of the house, almost without exception, maintained a sustained interest in the proceedings throughout the entire two days.

Iowa was represented by Walter L. Bierring, president of the American Medical Association; Gordon F. Harkness, president of the Iowa State Medical Society; Thomas A. Burcham, president-elect; Robert L. Parker, secretary; Oliver J. Fay, chairman of the Board of Trustees; Fred Moore, T. F. Thornton, and V. L. Treynor, delegates from Iowa; Tom B. Throckmorton, delegate of section of neurology and psychiatry.

Fred Moore  
T. F. Thornton  
V. L. Treynor

Dr. T. F. Thornton: Mr. President, I *move* that the report of the Delegates to the American Medical Association as printed in the handbook on page 38 be approved.

*The motion was regularly seconded, put to a vote and carried.*

Dr. Moore: There is one other thing we should do, I think, in this connection, which I didn't have a chance to discuss with Dr. Thornton, and that is the adoption of the following resolution:

*"Resolved, That the House of Delegates of the Iowa State Medical Society endorses the action of the House of Delegates of the American Medical Association at its special meeting held in Chicago, February 15-16, 1935."*

*I so move.*

*The motion was regularly seconded.*

President Harkness: It has been moved and seconded that the supplementary report of the delegates to the American Medical Association be approved, this resolution as read by Dr. Moore:

*"Resolved, That the House of Delegates of the Iowa State Medical Society endorses the action of the House of Delegates of the American Medical Association at its special meeting held in Chicago, February 15-16, 1935."* Are there any remarks?

*The question was called for, put to a vote and carried.*

President Harkness: We now come to reports of Standing Committees of the House of Delegates. The first is the report of the Committee on Constitution and By-Laws. Dr. Brock.

## Reports of Standing Committees

### REPORT OF COMMITTEE ON CONSTITUTION AND BY-LAWS

House of Delegates, Iowa State Medical Society:

Your Committee on Constitution and By-laws herewith submits its report in accordance with the provisions of the by-laws.

The following amendments to the constitution were presented for first reading at the 1934 session and accordingly come up for final reading and consideration at this session of the House of Delegates.

1. Article IV, Section 1, 2, 3, 4 and 5 be omitted in their entirety and in lieu thereof, enact the following: "This Society shall consist of members who shall be members of the component county medical societies who have been certified to the headquarters of this Society, and whose dues and assessments for the current year have been received by the secretary."

2. Article VII, Section 1. The word "daily" be deleted from line 2.

(It has been the custom for many years to hold but one session on Friday, the third day of our annual session. Thus we have long violated the provision of the constitution which requires not less than two general meetings daily. This word should be omitted to conform with established custom.)

3. Article VIII, Section 4. That this section be omitted.

(This section was added at the time of the change to the president-elect system. It has served its purpose and should now be deleted from the constitution.)

These amendments were proposed by the committee in 1934 and your Committee on Constitution and By-laws for 1935 moves that they be adopted.

The committee met at the offices of the State Society, February 7, 1935, and unanimously agreed to propose the following changes in the constitution for your consideration, pending final action in 1936:

Article IV, Section 6. (Section 2, if proposed amendment quoted above is carried.) All of the first sentence, following the first two words "Life members" be omitted and in lieu thereof, enact the following: "shall be those members who have been in good standing for a period of thirty or more successive years prior to the time of application for life membership and who are recommended for life membership to the House of Delegates by a vote of their county medical society."

(Life membership is usually conferred as a real honor and distinction. Many members feel that qualification for life membership in our Society is now so low and so many are admitted each year, that it does not confer real distinction upon those being granted life membership. Under the present ruling a physician may not have been a member for a number of years, but if his county votes him life membership and presents it to the House of Delegates

gates, he may still be made a life member. The proposed amendment necessitates continuous and recent support of the medical society and will confer real distinction upon those being granted the privilege of life membership.)

Article V. Change the period in the last line, following the word "Constitution" to a comma, and add the following: "and (3) ex-presidents of the Society."

(At the present time, when a president has served his term, there is no provision to keep him in the official body of the Society. His counsel, made valuable by his years of experience in official positions, is lost to the Society. This amendment will give him a voice in the business proceedings of the Society and will prove a real asset to the Society.)

Article VIII, Section 3. The words "and Trustee" be deleted from lines 5 and 6.

Your committee also proposes the following amendments to the by-laws of the Society:

Chapter I. Section 1 be made Section 2, Section 2 be made Section 3, etc., etc., all through this chapter and the following section be enacted and named Section 1:

"This Society shall consist of Members, Associate Members, Delegates, and Life Members.

"a. Members—The members of this Society shall be the members of the component county medical societies.

"b. Associate Members—Teachers in any regular medical school, resident in Iowa, in no manner engaged in the practice of medicine, and not otherwise eligible to regular membership, may become associate members of this Society, when elected associate members of the component society of the county in which said teachers live. Such members shall be designated associate members; they shall enjoy the same privileges as regular members and shall be subject to the same conditions.

"c. Delegates—Delegates shall be those members who are elected in accordance with this constitution and by-laws to represent their respective component county societies in the House of Delegates of this Society.

"d. Life Members—as defined in the constitution."

(If Article IV is amended as recommended above, this amendment to the by-laws should be enacted or there will be no classification of membership.)

Chapter I, Section 4. (Section 5, if above amendment is enacted.) The words "enter his name on the registration book" in line 2 be deleted and the following words substituted therefor: "be registered".

(For several years, owing to the heavy registration, we have used a card registration system rather than a registration book. This amendment should be enacted in order that our constitution and by-laws will conform with established custom.)

Chapter VI, Section 4. The words "and shall be paid quarterly" be deleted from line 34.

(For several years the secretary's salary has been paid monthly.)

Chapter XIV, Section 4. The words "and shall be paid quarterly" be deleted from line 3.

(The salary of the editor is paid monthly.)

Chapter XIV, Section 6. The word "quarterly" be deleted from line 4.

(The JOURNAL printing expenses are paid monthly as incurred.)

Chapter IV, Section 9. The words "who are not members of the House of Delegates" be deleted from lines 3 and 4.

(Because of this wording, a committee appointed a couple of years ago from members of the House of Delegates was declared illegal. The real intent of this section was to allow the House of Delegates to appoint committees from either the members or non-members of the House of Delegates. This amendment will clarify this situation.)

Chapter VIII, Section 1. Add a line containing the words "A Committee on Medical Economics." As line 12 of this section.

(At present the Committee on Medical Economics is a special committee of the House of Delegates. Such an important committee should be made a standing committee.)

Chapter VIII. Add a Section 11, which will define the duties of the above Medical Economics Committee, as follows: "The Committee on Medical Economics shall consist of three members whose duty shall be to investigate matters affecting the economic status of the medical profession of the state and it shall report annually to the House of Delegates such recommendations as may in its judgment seem proper."

Chapter VIII, Section 1. Add a line, which will be line 13, containing the words: "A Committee on Medical Education and Hospitals."

(This committee was made a standing committee of the House of Delegates by resolution passed by the House in 1932 but it must be done by amending the by-laws as outlined above.)

Chapter VIII. Add a Section 12, defining the duties of the above Committee on Medical Education and Hospitals, as follows: "The Committee on Medical Education and Hospitals shall consist of three members, who shall serve in this state in a similar capacity as the Council on Medical Education and Hospitals does for the American Medical Association and shall have referred to it all questions pertaining to hospitals and medical education."

Walter R. Brock, Chairman  
John H. Henkin  
W. A. Sternberg

Dr. Walter R. Brock: There is an error in the report of the Committee on Constitution and By-Laws as it appears in the handbook. On page 42 the Committee recommends three changes in the Constitution. These changes come up for final consideration at the 1936 meeting of the House of Delegates.

The proposed change to Article VIII, Section 3, should be: Omit the words "but no delegate" from line 3, all of lines 4 and 5, and the word "Trustee" from line 6 from Article VIII, Section 3.

(Delegates are usually elected to serve in that capacity for their counties because they are well thought of by the members of their county and are



responsible and trustworthy. The State Society at the present time cannot elect these men as officers. It is the intent of this change to remedy this situation so that delegates may be elected to any office in the Society, provided they have the other necessary qualifications.)

The Committee has put its approval upon these changes and the report is signed by Drs. Brock, Henkin and Sternberg.

I *move* you, Mr. President, that these changes be adopted or approved.

President Harkness: Dr. Brock, the Chair rules that it will be impossible to adopt or rather, to approve the recommendations as made in toto. We will have to take each one up separately, and, since these are changes in the Constitution and By-Laws, we can adopt them rather than approve them.

Dr. Brock: Will you have the Secretary read those changes for us?

President Harkness: Do you want first the changes that were read at the 1934 meeting, which are ready for adoption now?

Dr. Brock: Do you want those re-read, Mr. President?

President Harkness: Changes in the Constitution are too important not to be read, Dr. Brock.

Dr. Brock: I will ask Dr. Parker to read that for the House of Delegates.

Secretary Parker: "The following amendments to the Constitution were presented for first reading at the 1934 session and accordingly come up for final reading and consideration at this session of the House of Delegates.

1. Article IV, Sections 1, 2, 3, 4 and 5 be omitted in their entirety and in lieu thereof, enact the following: 'This Society shall consist of members who shall be members of the component county medical societies who have been certified to the headquarters of this Society, and whose dues and assessments for the current year have been received by the Secretary.'"

Dr. Arthur W. Erskine: I should like to have read Sections 1, 2, 3, 4 and 5 of Article IV of the present Constitution.

Secretary Parker: "Article IV. Composition of the Society.

"Section 1. This Society shall consist of Members, Associate Members, Delegates, Guests, and Life Members.

"Sec. 2. Members. The members of this Society shall be the members of the component county medical societies.

"Sec. 3. Associate Members. Teachers in any regular medical school, resident in Iowa, in no manner engaged in the practice of medicine, and not otherwise eligible to regular membership, may become associate members of this Society, when elected associate members of the component society of the county in which said teachers live. Such members shall be designated associate members; they shall enjoy the same privileges as regular members and shall be subject to the same conditions.

"Sec. 4. Delegates. Delegates shall be those members who are elected in accordance with this Constitution and By-Laws to represent their respective component county societies in the House of Delegates of this Society.

"Sec. 5. Guests. Any distinguished physicians, not a resident of this state, may become a guest during any Annual Session upon invitation of the Society or its Council, and shall be accorded the privilege of participating in all of the scientific work for that session."

President Harkness: This proposed change having been read at the 1934 session, it is now before you for adoption.

Dr. Brock: I *move* that that amendment be adopted.

*The motion was regularly seconded, put to a vote and carried.*

President Harkness: Dr. Brock, do you wish to have the Secretary read the next change?

Dr. Brock: Yes.

Secretary Parker: "Article VII, Section 1. The word 'daily' be deleted from line 2.

"(It has been the custom for many years to hold but one session on Friday, the third day of our annual session. Thus we have long violated the provision of the Constitution which requires not less than two general meetings daily. This word should be omitted to conform with established custom.)"

Dr. Erskine: Mr. President, I should like to have the section read as it is now and as amended. We understand it, but that is the only way it can be done legally.

Secretary Parker: "Article VII. Sessions and Meetings.

"Section 1. The Society shall hold an Annual Session, during which there shall be held daily not less than two general meetings, which shall be open to all registered members, delegates, and guests."

As proposed, the Section would read: "The Society shall hold an Annual Session, during which there shall be held not less than two general meetings, which shall be open to all registered members, delegates, and guests."

Dr. Brock: I *move* the adoption of that change.

*The motion was regularly seconded.*

President Harkness: This change in the Constitution, having been read before the 1934 session, is now ready for adoption. Those in favor signify by the usual sign; opposed. *It is carried.*

Secretary Parker: "Article VIII, Section 4. That this section be omitted."

That section reads:

"Sec. 4. At the election of officers at the session of 1915 there shall be elected a President who shall enter upon the duties of his office at once, and also a President-Elect who shall enter upon the duties of the Presidency one year later. Thereafter, the President-Elect shall enter upon the duties of the Presidency one year from the date of his election."

Dr. Brock: I *move* the adoption of that amendment.

*The motion was regularly seconded.*

Dr. E. E. Shaw: I am not acquainted, I guess, with the Constitution and By-Laws, but is there provision elsewhere in the Constitution and By-Laws, if this article is deleted, for the election of a President-Elect and a President, or is that only in this article? If this article is deleted and it is not elsewhere in the Constitution and By-Laws, then the provision for the election of a President-Elect will automatically be suspended, will it?

President Harkness: Section 1 of Article VIII specifies: "The officers of this Society shall be a President, two Vice Presidents, a President-Elect, a Secretary, a Treasurer, eleven Councilors and three Trustees.

"Sec. 2. The president-elect and vice presidents shall be elected for a term of one year," etc.

The only thing it takes out is the fact that the president-elect shall enter upon the duties of president one year from his election.

Dr. John I. Marker: If we take this out, where does it state that the president-elect takes office one year from the date of his election? Section 1 does not state that. By practice, we have been doing it, but where will you get your authority to do it after you have deleted Section 4?

President Harkness: I don't think there is any place that specifies that at all.

Dr. John T. Hanna: May I ask the Constitution and By-Laws Committee to explain why they made that recommendation?

President Harkness: The question has been asked, why did you make this recommendation? It was made a year ago.

Dr. Brock: I don't know; I wasn't on the Committee.

President Harkness: It states in the handbook that this section was inserted at the time we changed to the president-elect system.

The question Dr. Marker raises, however, is that if we delete this from the Constitution, there will be no place in the Constitution which will state when the president-elect takes office. That is the point you are making?

Dr. Marker: Yes.

Dr. Lee R. Woodward: Can these amendments submitted a year ago be amended at the present time? They cannot be, can they?

President Harkness: No. Does everybody clearly understand them? Are you ready for the question? Those in favor of the adoption of this report signify by the usual sign; those opposed. *The motion is lost.*

Dr. Brock, the Chair would suggest that you, as chairman of the committee, move that the suggestions as made in the Constitution this year, not the By-Law changes, be received by this body. They have to lay over for one year.

Dr. Brock: *I make that motion, Mr. Chairman.*

*The motion was regularly seconded.*

President Harkness: It has been *moved* and *seconded* that the further changes in the Constitution, suggested for the first time at this meeting, be received by this body, to lay over for final action until

next year. All those in favor signify by the usual sign; opposed. *It is carried.*

Dr. Hull: Is it going to be necessary to incorporate an article to provide for the election and the seating of the president-elect? We will be in the same fix a year from now that we are in now.

President Harkness: We are not in any fix at all. We have defeated it.

Dr. Hull: I know we have defeated it, but if you want to eliminate that part, you have to make some provision for it.

President Harkness: If it is the desire to eliminate the rest of it excepting that, it is up to the Committee on Constitution and By-Laws to bring in such a resolution. As it is now, it has been lost. Dr. Brock, the Chair will entertain a motion from you that the suggested changes in the By-Laws as published in the handbook be received, and they will lay over until our Friday meeting for final action. We will ask the delegates to read these carefully so they will be prepared to vote on them intelligently Friday morning.

Dr. Brock: *I move* that the recommendations be approved as they appear in the handbook.

President Harkness: It has been *moved* and *seconded* that the further recommendations of the Constitution and By-Laws Committee be received and placed on file and await final action Friday morning. Are there any remarks? Those in favor signify by the usual sign; opposed. *It is carried.*

Committee on Finance, Dr. McClure.

#### REPORT OF THE FINANCE COMMITTEE

A meeting of the Finance Committee was held in the central office of the Society on February 7, 1935. All members of the committee were present.

Eleven checks which were outstanding at the time the 1934 report of the committee was made, had in the meantime been cleared and were accounted for.

The committee reviewed the audit for the fiscal year 1934, including all bills with their corresponding orders and checks. Twenty checks were outstanding on December 31, 1934, when the books were closed for the year. These were listed and filed to facilitate the 1934 audit. At the time of the committee meeting, all but two of these outstanding checks had been cleared and were accounted for. The committee voted to accept the 1934 audit prepared by Mr. Mills of Widdup & Company.

Notes for 1932, 1933 and 1934 dues in the amount of \$610.50 are being held by the secretary. Of this total, \$44.00 is collectible for 1932 dues, \$294.00 for 1933 dues, and \$272.50 for 1934 dues.

Ernest C. McClure, Chairman

Dr. Ernest C. McClure: Mr. President and Delegates: *I move* the approval of the report.

*The motion was regularly seconded.*

President Harkness: It has been *moved* and *seconded* that the report of the Finance Committee as published in the handbook be approved. Are there any remarks? Those in favor signify by the usual sign; opposed. *It is carried.*

Medico-legal Committee, Dr. Ely.



### REPORT OF MEDICO-LEGAL COMMITTEE

During the past year, your Medico-Legal Committee has had little to do. Owing to the fact that many members of the Society, who previously were without commercial malpractice protection, have recently purchased it, the Society has not been called upon to participate in the defense of any of its members since May, 1934.

There are a few old cases which have not been settled or dismissed and which are still, legally, the responsibility of the Society.

In view of the fact that the depression has increased the malpractice hazard, it would seem that the increase in the purchase of commercial insurance by our members has been a wise thing.

Frank A. Ely, Chairman

Dr. Frank A. Ely: Supplementing the brief report as it appears in the handbook, I wish to say that, because of the fact that during the past year we have only been required to enter into the defense of two of our members, and inasmuch as there are a number of old cases that are just dragging on through the courts, and inasmuch as a report from our attorney costs quite a little money, I decided it was not sufficiently important to have such a report at this time; therefore, it doesn't appear in the report.

*I move the adoption of the report.*

*The motion was regularly seconded.*

President Harkness: It has been *moved* and *seconded* that the report of the Medico-Legal Committee as published in the handbook be approved. Are there any remarks? Those in favor express themselves by the usual sign; opposed. *It is carried.*

We now come to the Publication Committee, Dr. Simmons. (Absent) The Chair will entertain a motion to approve this report as published in the handbook.

appreciation to these several institutions, which, through their fine spirit of cooperation, have made this valuable section of our JOURNAL possible.

Reflecting a nationwide optimism in economic recovery, additional advertising material has been received during the year which has added materially to our income from this source. Believing that the primary purpose of the JOURNAL is to serve as a house organ for the Iowa State Medical Society, and to maintain its high ethical character, we have not encouraged the solicitation of advertising of a questionable character, even though the same advertising material has been accepted elsewhere. We believe, with the general feeling of optimism, particularly in our local area, that we will be able to secure a greater amount of advertising, particularly of a local character, during the next fiscal year and have employed a capable young man on a commission basis to promote advertising in the local field.

As our years of service in producing the JOURNAL multiply, we appreciate the ineffectiveness of our work except as a high standard of efficiency is maintained through the active cooperation of that large group of society members who have generously devoted their time and talent to the improvement of the JOURNAL. We would not feel that this report was complete without an expression of due and sincere appreciation to those who have assisted your editor and the Publication Committee during the past year.

Ralph R. Simmons, Editor

Dr. L. L. Carr: *I move it be approved.*

*The motion was regularly seconded, put to a vote and carried.*

President Harkness: Committee on Necrology, Dr. Erskine.

Delegates, I am going to request that, during the reading of the names of the departed members, we refrain from smoking, and stand.

### REPORT OF THE PUBLICATION COMMITTEE

The House of Delegates, Iowa State Medical Society:

Since the last annual session of the Iowa State Medical Society, the JOURNAL has embarked upon no new projects other than the development of the department devoted to the activity of the Woman's Auxiliary. This department, under the able editorship of Mrs. Oliver J. Fay, has reflected the activities of the Auxiliary, and, we believe, added to the usefulness of the JOURNAL in reporting and recording medical activities within the state.

Acting upon a conviction that clinical teaching is perhaps best accomplished through case review and study, we have encouraged reports from several organized hospital staffs. The Finley Hospital at Dubuque and the Broadlawns General Hospital in Des Moines, through appropriate committees, have supplied terse clinical reports for each issue of the JOURNAL. The University Hospital at Iowa City has, from time to time, furnished us with clinical material. We wish at this time to express our sincere

### REPORT OF THE COMMITTEE ON NECROLOGY

House of Delegates, Iowa State Medical Society:

During the year of 1934 death has come to fifty-three of our colleagues. The youngest was thirty-two years of age, the oldest, eighty-five. Twenty-two of those who died were sixty years of age or younger, and ten were under fifty.

Six died after a long illness; nineteen of heart disease or arteriosclerosis; six of apoplexy or cerebral hemorrhage, three of streptococcal infection; five of pneumonia; two of cancer, and three deaths were accidental. There was one death each from Bright's disease, diabetes mellitus, encephalitis, gastritis, and intestinal obstruction.

May we stand in a quiet memorial to our departed colleagues, while their names are read?

Harold A. Spilman, Chairman  
Arthur W. Erskine, Secretary

## January 1, 1934, to January 1, 1935

Alford, Edward True.....	W. Palm Beach, Fla..	59	Sept. 22, 1934	Heart
Allen, Paul Edward.....	Cherokee .....	51	July 2, 1934	Streptococcic infection
Baldrige, Clarence William.....	Iowa City .....	38	Nov. 22, 1934	Automobile accident
Bocken, Herman.....	Harlan .....	47	June 10, 1934	Heart and pneumonia
Brown, Cecil W.....	Clinton .....	57	Jan. 8, 1934	Prolonged illness
Castles, Thomas Ralph.....	Albia .....	52	July 27, 1934	Hypertension
Dougherty, John Philip.....	Sioux City.....	57	Aug. 11, 1934	Pneumonia
Fauth, Karl John.....	Wellsburg .....	36	May 17, 1934	Pneumonia
Folsom, Shirley Dan.....	Muscatine .....	46	July 22, 1934	Heart
Franchere, Frederick Erasmus.....	Sioux City.....	67	April 28, 1934	Arteriosclerosis
Frear, Edwin D.....	Danbury .....	79	Mar. 19, 1934	Prolonged illness
Garrett, John Milton.....	Fort Dodge.....	65	Aug. 18, 1934	Heart
Grimes, Eli.....	Des Moines.....	66	Jan. 14, 1934	Cancer of pancreas
Gustin, Plomer Julius.....	Bedford .....	38	May 27, 1934	Suicide
Harrison, Edward Wesley.....	Winfield .....	66	July 6, 1934	Heart
Hejinian, Aram Garabed.....	Anomosa .....	70	July 5, 1934	Coronary thrombosis
Hickman, Mack.....	Indianola .....	58	Jan. 26, 1934	Prolonged illness
Hill, Leslie Grant.....	Estherville .....	67	Feb. 24, 1934	Acute gastritis
Hogle, Kate Anna Mason.....	Mount Vernon.....	74	June 2, 1934	Heart
Huntoon, DeWitt Clinton.....	Waterloo .....	61	April 17, 1934	Apoplexy
Juen, Joseph A.....	Ossian .....	59	Mar. 11, 1934	Cerebral hemorrhage
King, Thomas Wayne.....	Lamoni .....	53	Mar. 28, 1934	Fractured skull
McCrary, Delbert Warren.....	Lake City .....	66	Jan. 9, 1934	Heart
McCray, Frank Herbert.....	Schaller .....	67	Jan. 14, 1934	Prolonged illness
McCreight, Arthur Henry.....	Fort Dodge.....	68	Mar. 28, 1934	Pneumonia
McLaughlin, Philip Benedict.....	Sioux City.....	61	Nov. 3, 1934	Heart
Maloy, John Thompson.....	Bedford .....	63	Sept. 14, 1934	Heart
Mills, Margaret Billingsley.....	Ottumwa .....	72	Sept. 30, 1934	Intestinal obstruction
Mulick, James William.....	Elma .....	67	Nov. 8, 1934	Apoplexy
Murphy, John Joseph.....	Sioux City.....	48	Sept. 20, 1934	Streptococcic infection
Negus, Alvah.....	Keswick .....	67	April 15, 1934	Encephalitis
Patrick, Russell A.....	Marshalltown .....	32	June 22, 1934	Bright's disease
Pond, Issi Otto.....	Perry .....	60	Mar. 15, 1934	Coronary thrombosis
Prescott, Lee Washbon.....	Sloan .....	52	May 5, 1934	Pneumonia
Reynolds, John William.....	Creston .....	59	Mar. 14, 1934	Heart
Runyon, William Darrow.....	Sioux City.....	47	June 23, 1934	Cancer
Sanders, Charles Willard.....	Northwood .....	74	Mar. 27, 1934	Apoplexy
Scarborough, Herbert Victor.....	Norton, Kansas.....	58	Jan. 1, 1935	Coronary disease
Schmidt, Arthur Albert.....	Postville .....	52	Jan. 22, 1934	Throat infection
Shultz, Charles S.....	Spirit Lake.....	71	April 12, 1934	Pneumonia
Smith, John Christopher.....	Stacyville .....	45	Dec. 28, 1934	
Stephenson, Robert Bruce.....	Libertyville .....	76	Sept. 15, 1934	Accident
Sturdivant, Lawrence Jones.....	Exline .....	71	Oct. 14, 1934	Cardiorenal
Svebakken, Otto O.....	Decorah .....	59	Jan. 12, 1934	Automobile accident
Taylor, James Fitz.....	Sioux City.....	67	July 2, 1934	Heart
Thomas, Samuel W.....	Melcher .....	85	Mar. 6, 1934	Prolonged illness
Valenta, Joseph A.....	Cedar Rapids.....	62	Mar. 17, 1934	Heart
Voldeng, Matthew Nelson.....	Woodward .....	71	Oct. 21, 1934	Cerebral hemorrhage
Vorwerk, Anthony H.....	Burlington .....	60	July 26, 1934	Heart
Wilder, Carleton Victor.....	Atlantic .....	82	Feb. 13, 1934	Diabetes mellitus
Wiley, Edward B.....	Grinnell .....	75	Mar. 5, 1934	Prolonged illness
Willis, Lyle Joseph.....	Fort Madison.....	34	Aug. 11, 1934	Accident
Zinn, George.....	Klemme .....	66	Jan. 29, 1934	Coronary thrombosis

The audience arose and stood in silent tribute while Dr. Erskine read the names of the departed members.

Dr. Erskine: I move the approval of the report.

*The motion was regularly seconded, put to a vote and carried.*

Dr. John I. Marker: I should like to ask that the name of Peter A. Bendixen be added to the list of deceased members.

Dr. Erskine: I learned, just as I came up here, that Dr. Bendixen died in the calendar year and also Dr. H. B. Young. I should like to add them to the list. I so move.

President Harkness: It is not necessary to make that as a motion. Those names will be included in the list.

Add to the report of the Necrology Committee the following names:

Peter A. Bendixen, Davenport, 52, December 30, 1934.

H. B. Young, Burlington, 83, December 10, 1934.

President Harkness: Report of the Committee on Public Policy and Legislation. Dr. Fred Moore.

#### REPORT OF COMMITTEE ON PUBLIC POLICY AND LEGISLATION

All legislative matters of major importance had to do with practice acts. Bills were introduced which rewrote both the chiropractic and the osteopathic practice acts. The Basic Science bill which was introduced established uniform educational requirements for all who seek license to practice.

Your committee is pleased to make this formal report of the passage of the Basic Science law in the



last general assembly of Iowa. This was the major objective to which our Society committed itself. After much controversy en route, the measure was piloted to the Secretary of State for enrollment—without damaging amendments by either branch of the legislature.

This bill was vigorously opposed in every conceivable manner by the chiropractors. As a counter attack, the chiropractic group introduced a bill raising their standards and increasing their course to four years. This was a smoke screen for fighting the Basic Science bill. Their lack of sincerity was proved when this chiropractic bill was withdrawn by those who introduced it.

Osteopathic opposition to the Basic Science bill did not appear in the open until shortly before the bill came to a vote in the legislature. This group also introduced a counter bill in which their course was extended to six and eight years. This osteopathic bill rode through the legislature on the tail of the Basic Science bill. Your attention is directed to the following interpretation of the Basic Science and osteopathic bills by the law firm of Hughes, O'Brien and Hughes, which is incorporated as part of this report.

To the Legislative Committee

Iowa State Medical Society,

Des Moines, Iowa.

Gentlemen:

The Basic Science law and the Osteopathic Practice act will be laws of this state, effective July 4, 1935. This letter will briefly state the principal features of each of the laws and my analysis particularly of the new Osteopathic Practice act.

The Basic Science law provides for a board of six members to conduct an examination in the basic sciences defined as anatomy, physiology, chemistry, pathology, bacteriology and hygiene, and to issue a certificate of proficiency in the basic sciences as a pre-requisite for eligibility to take an examination for a license to practice medicine, surgery, osteopathy, osteopathy and surgery and chiropractic or any other system or method of healing that may hereafter be legalized in the state of Iowa. No person shall be eligible for examination until he shall have attained the age of 21 years, is of good moral character and a graduate of an accredited high school or possesses qualifications equivalent thereto, which are to be determined by the Basic Science Board. The examination shall constitute a reasonable test of the knowledge of the applicant in the elementary principles of the basic sciences based on such knowledge as might be acquired from the completion of a course of study in the basic sciences for the following number of hours:

Subject	Hours	Subject	Hours
Anatomy .....	400	Pathology .....	160
Physiology .....	200	Bacteriology .....	100
Chemistry .....	200	Hygiene .....	40

The members of the board are to be selected from the faculties of the universities and four year colleges accredited by the Iowa State Board of Educa-

tional Examiners. Osteopathic and chiropractic schools are not accredited.

The foregoing is a brief summary of the important features of the new law. This legislation is a great step forward in advancing the qualifications of students and schools teaching the healing arts and will confer immeasurable benefits to the practitioners of the healing arts and the public generally.

The Osteopathic Practice act repeals and rewrites the old law. Suggestions have been made that the passage of this law offsets, in a measure, the benefits gained by the enactment of the Basic Science law. In my opinion such a statement is not justified by the facts. To sustain my opinion your attention is directed to the primary changes in the practice act.

The law which was repealed permitted a student to enter the osteopathic school as a graduate of a high school or the equivalent thereof, and take an examination for license to practice after obtaining a diploma from the osteopathic school upon completion of a four year course of study in an accredited osteopathic school; an additional two years was required for the practice of surgery. Under the new law the requirement is a high school education, or the equivalent thereof, and prior to matriculation in an osteopathic college the student shall have completed two years of college or university study, consisting of at least sixty semester hours of collegiate work in an accredited college or university and take an examination for license to practice after obtaining a diploma from the osteopathic school upon completion of a four year course of study in an accredited osteopathic school; to practice surgery completion of two years additional work is required. In other words, the requirements for a student to take an examination for a license to practice osteopathy will require a six year course of study, with an eight year requirement for osteopathy and surgery. The students also will be required to pass the Basic Science examination as a pre-requisite to examination for a license to practice. The course of study in an accredited school of osteopathy is supplemented by the teaching of many additional subjects which will necessitate an augmented faculty and substantial additional equipment.

The law which was repealed provided: "A license to practice osteopathy or osteopathy and surgery shall not authorize the licensee to prescribe or give internal curative medicines and a license to practice osteopathy shall not authorize the licensee to engage in major operative surgery." The same section was inserted in the new law with the following amendment: The words "internal curative medicine as used herein shall be so construed as not to include antidotes, biologics, drugs necessary to the practice of minor surgery and obstetrics, or to the simpler remedies commonly given for temporary relief." When this amendment was debated in the Senate it was openly admitted and argued by the sponsors and proponents of the osteopathic act that practically all osteopathic practitioners were doing the things which the amendment authorized and would continue to do so and that the amendment was merely legalizing

that which was openly recognized as being done. From my information on this subject, I am satisfied that this situation has always existed and have concluded that the amendment will have little effect upon the practice of medicine.

The following provisions are a part of the new law: "The board of supervisors of any county may enter into contract with one licensed hereunder for the care and treatment of its indigent sick;" and "one licensed hereunder shall have the right to examine applicants, recommend admissions and make reports in connection with the admission of patients to all state owned institutions." My opinion is that the law has always authorized an osteopath to do the things permitted by the last section. With reference to contracts with boards of supervisors for the care of the indigent sick, my thought and the opinion of many other lawyers is that this right existed under the law. While this question is debatable it is dependent on a reasonable interpretation of Section 5334-C1 of the Code of 1931. This section has not been interpreted by the supreme court. If the question were properly presented to the court it is my opinion that the decision would give osteopaths the right to contract under the provisions of this section.

My conclusion is that the osteopathic profession has gained nothing under the new law which did not heretofore exist. Contracts with boards of supervisors in any event relate more directly to the activity of the individual county medical societies.

Considering the entire situation with reference to the two new laws, it is my belief that the medical profession has assisted in gaining an objective, through the passage of the Basic Science law, from which will accrue great benefits to the general public. On the other hand, I am satisfied that the new osteopathic law raises the standard to such a high level that most of the osteopathic schools will have to meet the expense of additional faculties and equipment. The students will also have to pass the Basic Science examination and sub-standard schools cannot furnish adequate teaching and facilities. The result to me is obvious.

The success of the program of the Legislative Committee warrants high praise. No one will realize the amount of time you have unselfishly given nor the effort expended. You are entitled to a reward of merit. The Basic Science Law will be a lasting monument to honor you.

I am glad to have had a small part in furthering the legislation and want to express my thanks to you for the wonderful cooperation.

Very truly yours,

Hughes, O'Brien & Hughes,  
By W. J. O'Brien.

All of you are familiar with the methods of the committee in developing support for this legislation, namely, the education of our own profession, the public and the members of the legislature. Success was due primarily to the efforts of the component units of our society in their own communities. Little strength can be developed without this. The com-

mittee appreciates the sincere and intelligent effort made in most counties. We realize that it is impossible to determine and control the attitude of every legislator. Our conception of faithful and loyal support at home is not based solely upon the legislators' reaction to our interests. In fact some of our finest support and inspiration came from our own members in districts whose legislators were quite against us.

The Basic Science measure proved to be extremely controversial and its support and opposition had roots extending to most surprising places.

This committee has worked hand in glove with your Committee on Professional Relations, so closely in fact that the two reports might almost be merged without thought of committee personnel. In this connection it is appropriate to state that the Committee on Public Policy and Legislation gives full endorsement and recommends for your favorable consideration the report of the Professional Relations Committee.

The Legislative Committee deeply appreciates the unreserved support of all officers of our Society. It may seem inappropriate to make specific citations but we do feel that we should emphasize the encouragement which has been given to us at all times by the Trustees. They have been sympathetic listeners, excellent counsel and always a source of inspiration for determined effort.

Finally we pay our respects to our legal advisor, Willis J. O'Brien. He has devoted himself to the work at hand with sympathy, understanding and tact. It has been a pleasure to work with him. Much of our success we owe to him.

The committee's work of the year was saddened by the death of one of its members. Dr. Bendixen died suddenly on December 30, 1934. He was responsive to every request and suggestion and devoted himself to the service of this committee in behalf of our State Society. His wide contacts and range of experience in business made his counsel valuable. The sudden removal of such help was sorely missed. Credit for any accomplishments must be duly extended to Dr. Bendixen.

Respectfully submitted,

Fred Moore, Chairman  
Ransom D. Bernard

Dr. Moore: Mr. President and members of the House of Delegates: I really think you have had all the reports from this Committee this year that you wish. The Committee has done the best it could to keep you informed. Since this report was written for the handbook a report has been sent to every member of the State Society. If you did not receive such copy, then it must have been due to a clerical error or miscarriage in the mail at some point or other. I only want to add at this time the appreciation that your Legislative Committee holds for the support which has been given your legislative program by the rank and file of the membership of the State Society. As we have said repeatedly before, our strength lies in the interest, action and expression of the county units. If we will bear that in mind year in and year out and keep carefully before us our



definite legislative objectives, a great deal can be accomplished.

I move the approval of the report, Mr. President.

*The motion was regularly seconded.*

President Harkness: It has been moved and seconded that the report of the Committee on Public Policy and Legislation be approved. Are there any remarks? Those in favor signify by the usual sign; those opposed. *It is carried.*

The secretary has just received a wire from one who was formerly with us; he is with us in spirit now. I had a letter from him the other day saying he had solved the depression, had left the medical profession and is raising peanuts. Will you read this felicitating telegram from our old friend?

Secretary Parker: "Felicitations. Grand program. Wish could be with you. Regards to everybody. (Signed) Charles B. Taylor."

Dr. W. W. Beam: I should like to offer a short resolution.

*"Be It Resolved,* That the activities of the Committee on Public Policy and Legislation be given the unqualified endorsement of this Society, and that it be the sense of this House of Delegates that this Committee has, by untiring and unselfish efforts accomplished its objective in causing to be enrolled on the statute books the Basic Science Law, which is a great advance in the matter of public health legislation in this state, and be it

*"Further Resolved,* That the House of Delegates go on record as being favorable to the continuance of an aggressive policy in legislative matters pertaining to the public health and the welfare of the profession."

I should like to have that adopted.

*The resolution was seconded, put to a vote and carried.*

President Harkness: We now come to the reports of special committees of the House of Delegates. Committee on Child Health and Protection. Dr. McBride.

## Reports of Special Committees

### REPORT OF THE COMMITTEE ON CHILD HEALTH AND PROTECTION

A letter was sent to each county society, asking that a local Child Health and Protection or similar committee be appointed, to which all matters pertinent to that committee might be referred. To date, March 1, 1935, ten societies have replied to this request.

The committee met at Des Moines, October 15, 1934, at which time matters of general interest were discussed. The State Department of Health gave to each member of the committee a copy of sixty-six different publications issued by their department. These have all been reviewed by each member of the committee, whose constructive criticisms have been compiled and forwarded to the Department of Health, for guidance in revising the publications.

The matter of immunization projects sponsored by lay groups was discussed and a method adopted whereby such projects would be largely controlled by the doctors of the community, who should receive pay for their services. The consent of the local society is required before the State Department of Health will cooperate in promoting the program or in contributing the material to be used.

A second meeting of the committee was called January 29, 1935, at the request of the State Department of Health. The committee met at Des Moines, where it was in session from 10:30 a. m. to 7:30 p. m. The first matter of business was a discussion of the rules and regulations regarding the handling of the contagious diseases. Many recommendations as to changes in these rulings were made to the representatives of the State Department of Health, who in turn were to meet with the State Board of Health and pass on such recommendations as were endorsed by the department.

The matter of establishing a serum center for the

collection, pooling, and distribution of convalescent serum of the state of Iowa was favorably discussed. It has been found by the Department of Health that the method in which some county societies have indicated approval of immunization projects to be carried on in their locality has been so indefinite that the department was left in doubt as to the exact attitude of the county medical societies on these projects.

To remedy this situation a uniform approval blank was drafted by the committee which should be signed by the officers of the county medical society, when its approval of any local health project has been requested. It was the consensus of the committee that the approval of the county society was applicable to the single project for which approval had been sought and that a new approval blank must be submitted for each additional or subsequent project to be carried on in that locality.

Inasmuch as smallpox is apparently on the increase in Iowa, it was decided that the committee should promote an exhibit pertaining to smallpox vaccination for display among the scientific exhibits at the 1935 annual meeting.

The State Department of Health asked the committee to review some published material relevant to the proper lighting of homes, offices, and school buildings, which had been prepared for distribution by a commercial firm. This material is extensive and is being read by members of the committee, by physicists, ophthalmologists, and lighting engineers. When their respective reports have been compiled, a report will be made to the State Department of Health.

The American Committee on Maternal Health has asked that a state committee on maternal health be appointed to function in conjunction with the national organization. The Committee on Child Health and Protection discussed the matter and has suggested to the State Society officers that such a com-

mittee be made a joint committee with ours; since maternal and child welfare have so much in common. It is felt that our committee could work much more effectively, if a committee similar to the Child Health and Protection Committee could be appointed in each county. All matters such as immunization programs, or other projects pertaining to child health could then be referred to these sub-committees for prompt attention. Since many of these projects are sponsored and conducted by lay groups, it is a definite responsibility of our profession to see that our part in such projects is dispatched promptly if we are to maintain the leadership in these health problems.

R. H. McBride, Chairman

Dr. R. H. McBride: The report is published in the handbook but I have two addenda I should like to present.

"Since state and federal legislation governing the control of reproduction is conflicting and renders certain phases of medical practice illegal, it is important that the medical profession as a whole should undertake to clarify and lead in the solution of these questions which involve medical practice and procedures. The importance of such control in medical practice, where such control constitutes a therapeutic measure, is obvious to all medical men.

"The Catholic Church has officially endorsed a physiologic method of limiting human reproduction, and Protestant Churches have quite universally endorsed the dissemination of birth control information under medical supervision. Relief organizations are concerned about the problem of maintaining families on relief where a percentage increase of births among parents on relief is shown. The immense social importance of such measures, particularly of selective birth control, is apparent.

"The House of Delegates of the Iowa State Medical Society recommends to the House of Delegates of the American Medical Association that it officially sanction the appointment by the Board of Trustees of a committee to study carefully all these related problems and formulate at least a preliminary report to be presented to the 1936 session of the House of Delegates."

"Whereas, the American Committee on Maternal Welfare, representing many national and sectional organizations concerned with maternal and child health, has requested the development in Iowa of a State Committee to cooperate with it in furthering maternal health programs, and

"Whereas, the Committee on Child Health and Protection is by direction of this House of Delegates already concerned with such problems, therefore be it

"Resolved, That the Committee on Child Health and Protection be authorized to cooperate with the American Committee on Maternal Welfare in developing its program within the state of Iowa, and be it

"Further Resolved, That the Committee on Child Health and Protection be increased from five members to seven members, in order more effectively to carry on its work."

I move the approval of the report and also the two addenda.

*The motion was regularly seconded.*

Member: Can you legally increase the number from five to seven?

President Harkness: Yes. This is a special committee. You cannot increase the number of members on standing committees because they are specified in the By-Laws.

This report with the two addenda are up for your approval. Those in favor signify by the usual sign; opposed. *It is carried.*

We will now hear from the Historical Committee, Dr. Bierring.

### REPORT OF THE HISTORICAL COMMITTEE

During the past year the Historical Committee has lost one of its most esteemed members, Dr. Henry B. Young of Burlington. With his experience of more than fifty years as an Iowa practitioner in the specialty of ophthalmology, he was particularly conversant with the historical development of Iowa medicine, and contributed most liberally to the same.

The department of the History of Medicine in Iowa is maintained each month in the JOURNAL. The comprehensive and interesting medical history of Lucas county by Drs. Tom Morford and Tom Bentley Throckmorton was completed with the March issue of the JOURNAL. This has been a distinct contribution to the history of medicine in Iowa, and will serve as a model for other counties to follow.

An interesting account of the pioneer physicians of Page county by Dr. J. F. Aldrich of Shenandoah, was published in the August JOURNAL. In the December number appeared the first installment of the History of Medicine in Jefferson county by Dr. J. Fred Clarke of Fairfield, which is being completed in the early issues of 1935, and adds a very interesting chapter to Iowa medical history.

The medical history of Black Hawk county is being prepared by Dr. Thomas U. McManus of Waterloo, and that of Dubuque county by Dr. Henry G. Langworthy, and will be published during the coming year.

A complete history of the Iowa State Board of Health from its first meeting on May 5, 1880, to the present time, was published in the May, June and July numbers of the JOURNAL, being compiled by Dr. Frederick J. Swift, Deputy Commissioner of Health.

In the September, 1934, JOURNAL appeared an account of the early period of medical licensure in Iowa prepared by Dr. Tom B. Throckmorton which forms an interesting comparison with the developments of this later day.

An interesting story of the incidence and control of diphtheria in 1880 and 1881 was contributed by Dr. Ward Woodbridge of Central City. It presented a vivid picture of the difficulties encountered by our pioneer physicians in the control of this and other infectious diseases a half century ago.

Many other interesting historical facts have been added during the year. Special care has been exer-



cised in the collection of biographical data, particularly as related to our deceased members, recognizing that the life story of the Iowa doctor is an intimate part of the development of medicine in our state.

The committee is gratified with the progress made in the gradual completion of the first century of Iowa medical history, and begs to express its highest appreciation to the members of the Iowa State Medical Society for continued cooperation in this accomplishment.

Walter L. Bierring, Chairman  
Henry B. Young\*  
William Jepson  
Frank M. Fuller  
John T. McClintock  
Tom B. Throckmorton

\* Deceased Dec. 10, 1934.

Dr. Walter L. Bierring: I move that the report of the Historical Committee as published in the handbook be approved.

*The motion was regularly seconded, put to a vote and carried.*

President Harkness: Report of Committee on Medical Economics, Dr. Thornton.

#### REPORT OF THE MEDICAL ECONOMICS COMMITTEE

The Medical Economics Committee of the Iowa State Medical Society submits the following report of their activities during the past year.

The committee attended a program on "Socialized Medicine" presented at Waverly, September 20, 1934. The members of the committee took part in the discussion. At many of the subsequent meetings where this program was presented, one of the members of the committee appeared as a speaker.

On September 26, 1934, the committee met in the central office of the State Society. The problem of care of the indigent sick in counties which were without funds for this purpose was considered. At the suggestion of President Harkness a conference was held with Mr. Mulock, the state emergency relief director. Mr. Mulock decided that more data was necessary, and that another meeting be held when such data could be obtained.

Dr. Harkness reported that he had a letter from President Gilmore of the State University suggesting that they have a meeting to talk over the matter of Medical Education. The committee was of the unanimous opinion that Dr. Harkness should continue his contacts with the faculty.

The matter of federal appointments of physicians in transient camps was discussed, and it was agreed that it should be brought to the attention of the Council.

Dr. Harkness read a resolution from Dr. Lamb, of Davenport, which had received the approval of a number of laboratory men.

"Whereas, At the meeting of the House of Delegates of the Iowa State Medical Society in Des Moines, Iowa, May, 1934, discussion arose on the question of the re-establishment by the State Board of Health, through its laboratory at Iowa City, of

a statewide free serologic and a continuance of other free laboratory service;

"And, Whereas, This question was referred to the Committee of the State Medical Society on Medical Economics for making recommendations to the State Board of Health, and ultimately to the State Legislature;

"Be It Resolved, By the following physicians, members of the Iowa State Medical Society, who are primarily interested in clinical laboratory work, that the following suggestions and representations be made to the Medical Economics Committee for its consideration in this matter:

"1. That an unlimited free statewide serologic and other free laboratory service as rendered in the past by the Iowa State Board of Health Laboratory constitutes a serious and unwarranted encroachment in the field of the local private and hospital laboratories; just as a free diagnostic or surgical service rendered by the University Hospital would be a serious encroachment in the field of clinical medicine. There is a place for a limited free clinical service and, likewise, a place for a limited free laboratory service; but the unlimited practice of medicine by the state should not go on in the laboratory any more than in the operating room or hospital ward.

"We believe that in the past the free laboratory service has been abused; that in countless instances this service has proved to be free to the physician, but not so to the patient, a condition which it seems difficult to reconcile from any ethical standpoint with the real intent of a free service.

"3. We realize that the State Board of Health Laboratory has an important function in that part of the public health program which deals with the prevention and control of infectious and contagious disease. However, an indiscriminate free laboratory service alone does not and cannot accomplish this purpose. For example, in the case of syphilis, as is well known, the individual who acquires the disease remains serologically negative until from two to four weeks of a period in which he or she is actually in the most infectious stage. Moreover, when the Wassermann or Kahn test is reported positive the individual is still free to transmit the disease inasmuch as the degree of quarantine is largely a personal matter with the patient. There is but little actual curb on laxness in this respect if the patient chooses to be lax. The same may be said of the bacteriologic service in the examination of slides for gonorrheal infection. In other words, the rendering of free laboratory examinations cannot, in practice at least, be considered synonymous with or tantamount to prevention and control. Obviously these are quarantine measures.

"4. While it is not our business to define the jurisdiction of the State Board of Health Laboratory, may we, for the present purpose, point to an important difference between public health measures and private or individual health matters. As is well known, public health measures have to do with control and regulation en masse of communicable dis-

ease as illustrated by the examination of public water, milk, and food supplies, the examination of those who dispense food and drink, and surveys for the detection of diphtheria bacilli, streptococci, and meningococci carriers when the occasions arise.

"On the other hand, the desirable early diagnosis of the individual case of infectious disease cannot, in practice, be carried out with the greatest dispatch at a central state laboratory which may be from 100 to 200 miles distant. The following illustrations will emphasize this point. In the diagnosis of syphilis, it is the dark field examination made directly from the suspected lesion which gives the early confirmatory evidence of the disease, antedating serologic confirmation from two to three weeks; in typhoid, it is the blood culture; in meningitis, it is the immediate examination of spinal fluid; in diphtheria, it is the direct smear or culture, the report of which should be available in twelve to fifteen hours. When such early individual diagnoses are made or confirmed in these and other diseases, then the public health program should begin; and, where an effectual quarantine is established and enforced by the state health department, the measures for release from that quarantine are rightfully public health measures.

"5. Statewide free laboratory service has so encroached on the field of the private and hospital laboratories that the latter are unprofitable. Trained experienced physicians who could and would devote their entire time to this field, and who would constantly seek to enlarge their laboratory facilities are forced to retrench and divide their efforts in order to earn a living. Thus, there is no encouragement or incentive to the opening of new or additional private laboratories throughout the state which should prosper with a fair volume of work. In time local laboratory facilities could become available, not only in the larger centers, but in some of the smaller communities, thus bringing the service closer to the physician and patient.

"6. We believe that if the proper committees of the state legislature were fully conversant with all phases of the problem of free laboratory service there would be no disposition to enlarge or extend these facilities, nor to revert to the former system. On the contrary, it might be considered a business proposition for the legislature to direct that the state laboratory become, not only self-supporting, but help to defray the cost to the state of the board of health. We find that a plan could be worked out along this line that would not interfere with the legitimate activities in the state health program, and by relieving the state laboratory of the burden of a diagnostic service, give it more time for purely public health matters.

"7. By way of a constructive suggestion, and in conformity with the policy of the Iowa State Medical Society in resisting the practice of medicine by the state, we recommend that the State Board of Health Laboratories discontinue the statewide free diagnostic service as it applies to work that should be paid for. In case it is felt that the state laboratory facili-

ties must be maintained even for that type of work, then establish a system of charging fees commensurate with the average fees charged for similar tests. To provide for the patient who is really unable to pay, and still not in the status of a ward of the state, the patient and physician should certify jointly to the patient's limited financial ability, and then the patient should be notified by mail from the state laboratory that his test was made without charge. The laboratory records should be kept in such a way as to reveal instances of abuse of this free service.

"8. In conclusion, the foregoing representations have been made somewhat in detail for the reason that probably but little thought has been given to this phase of the laboratory situation in this state by a majority of the members of the Iowa State Medical Society. As pointed out previously, an indiscriminate free clinical service rendered by the University Hospital would not be tolerated, yet the principle involved in an unlimited free laboratory service is quite comparable. An indiscriminate free laboratory service is no more necessary from a public health standpoint than a free clinical service would be. This form of state medicine has, indeed, laid a heavy hand on clinical laboratory development, and if not controlled will continue to do so.

"Modern medicine cannot progress without more and better local facilities for such immediate laboratory examinations as blood and throat cultures, dark fields, spinal fluids, frozen sections of tissue, and autopsies; but, the local laboratory cannot render this desirable service in the face of an unlimited free state service, which has the effect of depriving the local clinical pathologist of a profitable volume of work."

The committee met in the central office again on November 28, 1934. Many of the State Society officers were present in addition to the members of the committee. The meeting had been called so that the committee might work out a uniform plan, acceptable to any county in the state, that could be used as the basis for payment of funds for medical relief in those counties which would have to have federal funds for such purposes. After considerable discussion an agreement was reached and the following recommendation was unanimously adopted. "In order that federal funds may be made uniformly available for medical relief purposes in those counties in Iowa which are or may be in need of such funds, during the present economic conditions, the Medical Economics Committee of the Iowa State Medical Society recommends that sixty-six and two-thirds per cent of the attached (state medical fee bill and the fee bill adopted by the Iowa X-Ray Club) fee bills be used as the basis for any such arrangements." In the afternoon the committee met with Mr. Mulock and Miss Tyler from the State Emergency Relief Administration. Mr. Mulock said that at that time they could not definitely promise to follow any plan for any length of time because legislative action might be taken which would change their entire set-up. How-



ever, he and Miss Tyler said they believed they could adopt the recommended plan in those counties in which they were going to have to use federal and state funds. In addition to the recommendation quoted, the committee also urged that the medical and hospital expenses should not exceed fifteen per cent of the total funds available for relief purposes in any county.

In considering the resolution drawn up by the laboratory men throughout the state and presented at the September meeting of the committee, the members decided to ask Dr. Lamb to select a committee of laboratory men who should draw up a schedule of fair prices for the University laboratory to charge for its service. When this list was drawn up the Medical Economics committee, Dr. Lamb's committee, and representatives from the Board of Health and the Laboratory should meet and try to arrive at a fair solution to this problem.

In January, Dr. Lamb was ready with the report of his committee, so a meeting of the Medical Economics Committee was called for the 23rd. Representatives from the State Department of Health and the University Laboratory were also present. Dr. Lamb again presented the resolution adopted by the laboratory men and which has been included above. The resolution was discussed at length by the laboratory men in the state, the representatives from the State Department of Health and those from the University Laboratory. The Medical Economics Committee decided unanimously to recommend to the House of Delegates that it favor the suggestions made by the laboratory men that a change be made in the fees for the state laboratory work. Laboratory work for indigent patients should be done without cost, but the laboratory work for private patients should be paid for on a basis commensurate with the fees charged by doctors in private laboratories. The following fees were recommended by Dr. Lamb and his committee as fair fees for such a basis:

Tuberculosis cultures .....	\$ .50	
Sputum .....	1.00	
Smears .....	1.00	
Typhoid Widal .....	2.00	
Kahn .....	2.00	} Both for \$4.00
Wassermann .....	3.00	
Spinal fluid .....	5.00	
Blood cultures .....	5.00	
Tissue .....	5.00 to 10.00	
Guinea pig inoculation.....	5.00	

The Medical Economics Committee also agreed to recommend that the House of Delegates recommend that the legislature make an appropriation to the State Laboratory for the free service given to the indigent. The committee also recommends that both the doctor and the patient sign a card certifying to such indigency.

The matter of the medical relief plan came up again for consideration since the plan recommended at the former meeting had not proved acceptable to the State Emergency Relief Administration. The two-thirds basis of the fee bill was rather high and since

hospitalization was not authorized under government regulations, the provision for the expenses not exceeding 15 per cent of the total relief expenditures was not applicable. The committee was fortunate in having present at the meeting Dr. K. E. Miller, regional director of the Federal Emergency Relief Administration, who discussed government rules and regulations for the use of federal funds for medical relief. The committee discussed a new plan and asked Dr. Miller if he thought the following plan would meet the approval of the Relief Administration: Fifty per cent of the fee schedule of the Iowa State Medical Society, with provisions for the adjustment of individual items on the fee schedule and provisions for the exemption of those counties that are now operating on an individual plan which they feel will work more economically and satisfactorily. Dr. Miller said he thought this would be approved and suggested two other provisions that should be made with this first one, namely: (2) The amount of money to be spent for medical services shall not exceed five per cent of all monies expended by federal, state and county for work relief and direct relief. (3) The counties shall be required to contribute to the relief fund to the extent of their ability and if this amount is deficient to meet the fixed percentage, the remainder of the allocation will be met from state or federal funds. The two additional provisions were accepted by the committee and the entire plan was submitted to the joint meeting of the Board of Trustees and the Council that afternoon for approval. After it had been approved by these groups, the committee met with Mr. Mulock and offered the plan to him. Mr. Mulock said this sounded like a fair working basis but suggested that this plan be gone over carefully the next day with him, Miss Tyler and Dr. Miller and representatives from the committee. The following day Miss Nelson and Dr. Parker met with these others. Dr. Miller suggested that the most important thing and really the first order of business in setting up this state-wide plan should be the appointment of a medical director. Then he could work with the State Emergency Relief Administration and the State Society and work out a suitable plan for medical relief. It was also decided that rather than the five per cent basis, as recommended by the Medical Economics Committee, a better basis for the allocation of funds for medical relief would be \$1.15 per month per family, whether on relief or on county care. This money could then be distributed to the various counties as needed. It was agreed, that first of all a medical director should be appointed and that he should work out a plan in cooperation with the Iowa State Medical Society and the Relief Administration on this basis already agreed upon.

Dr. T. C. Denny of Des Moines was appointed as medical director. He worked up a plan which was submitted to the members of the Medical Economics Committee on January 18 and approved by them.

The following collection agencies were approved by the committee after the usual thorough investigations had been made. The National School of Honesty

(re-approved) of Des Moines and the National Discount and Audit Company of New York. In extending this approval, the committee wishes to point out that this merely indicates that an investigation has shown that these companies are operating on an ethical basis. The doctors are urged to use their own judgment as to the best type of collection services offered to them.

T. F. Thornton, Chairman

Dr. Thomas F. Thornton: Mr. President and members of the House of Delegates: In addition to the report as published in the handbook on pages 48, 49, 50 and 51, I wish to make a supplemental report.

Since this report was written for publication, the Medical Economics Committee had a meeting in Des Moines, March 29, 1935. The principal thing that was taken up at that time, that is not in this report, was a letter from the secretary of the American Medical Association in regard to a meeting of the Bureau of Medical Economics of the American Medical Association at the Headquarters in Chicago on April 27, requesting that a representative be sent from Iowa who was most familiar with the various methods used by the various towns in Iowa in carrying on poor relief.

Your Medical Economics Committee unanimously voted to have your secretary, Dr. Parker, go and represent the Iowa State Medical Society. Then later the trustees, officers of the Society, requested that a member of the Medical Economics Committee also go, and I was at that meeting.

The matters that were voted on and approved at that meeting in Chicago, in addition to the ten principles adopted by the House of Delegates in Cleveland in 1934 as guidance for county medical societies in the conduct of medical service experiments, were recommendations that the following principles and administrative details should be carefully considered:

1. Freedom of choice by physician.
2. Complete control by county medical society.
3. Medical fees for low income groups based on the ability to pay rather than minimum fee schedules.
4. Fair determination of a patient's ability to pay.
5. Centralization of records and bookkeeping.
6. Complete medical service as needed.
7. Administration, service charge for operation of
  - a. Office
  - b. Reserve
    - (1) Emergency
    - (2) Catastrophic blow
8. Recognition of standing of medical specialties and resistance to exploitation by corporations of any type.

In addition to that, you have heard from the president's address today that the University is sending out cost patient application blanks which the patient, in the future, will have to sign at the time the physician signs the statement. We believe this is a genuine example of medical education cooperating with the medical profession and should be called to your attention.

Mr. President, I move the approval of this report. President Harkness: With the additions?

Dr. Thornton: Yes.

President Harkness: It has been moved that the report of the Committee on Medical Economics, with the additions as read by Dr. Thornton, be approved.

*The motion was regularly seconded, put to a vote and carried.*

President Harkness: We will now hear from the Committee on Medical Education and Hospitals. Dr. Erskine.

## REPORT OF THE COMMITTEE ON MEDICAL EDUCATION AND HOSPITALS

The duties of the Committee on Medical Education and Hospitals, as re-defined by the House of Delegates at the last annual session, have not been onerous. The only function it has been requested to perform has been to aid a committee of the Iowa X-Ray Club to conduct a survey of the standards of practice in the x-ray departments of hospitals within the state. This survey is now being made.

Arthur W. Erskine, Chairman

Dr. Erskine: Mr. President, I move that the report as published in the handbook be approved.

*The motion was regularly seconded, put to a vote and carried.*

President Harkness: We will now have the report from the Medical Library Committee, Dr. Jeannette Dean-Throckmorton.

## REPORT OF THE MEDICAL LIBRARY COMMITTEE

Report of the Iowa State Medical Library Committee covering the period from July 1, 1933, to June 30, 1934, submitted to the Iowa State Medical Society in February, 1935:

Requests for literature.....	3,089	
Pieces of literature loaned.....	13,047	
Pieces of literature borrowed from other libraries.....	53	
Letters written .....	1,132	
Cards written .....	1,588	
Visitors in the Library.....	2,085	
Telephone calls coming in (Long distance 6).....	740	
Cards made for new acquisitions—Book file .....	1,466	
Journal file .....	222	
Reprint file .....	8,554	
	10,242	10,242
Periodicals received by subscription regularly.....	124	
by gift .....	59	
	183	183
Accessioned volumes in the Library June 30, 1934.....	18,000	
(Increase of 964 since July 1, 1933)		
Gifts to the Library—books .....	111	
journals (bound) .....	1,016	
journals (unbound) .....	12,338	
reports .....	112	
transactions and proceedings.....	47	
bulletins .....	221	
pamphlets .....	191	
pictures .....	39	
programs .....	13	
studies .....	5	
directories .....	2	
reprints .....	900	
clippings .....	10	
museum exhibits (4 donors)		
Duplicates given to other Libraries—books .....	70	
journals (bound) .....	135	
journals (unbound) .....	1,556	
transactions .....	120	
reports .....	8	
pamphlets .....	1	

Jeannette Dean-Throckmorton, Librarian,  
Iowa State Medical Library.  
Con R. Harken, Committee Chairman,



Dr. Jeannette Dean-Throckmorton: Mr. President and members of the House of Delegates: My supplementary report for the Medical Library Committee will consist of two parts. The first is an explanation.

I had but one copy of journals and books, so in order to get around to all of you I had to keep it in circulation. Our period of loan is two weeks. Sometimes when it is out on loan and you ought to have it, I am sorry to have to say to you that it is not available, but that just as soon as it is, I will see that you get it. Supposing there is just one doctor ahead of you, that means that you have to wait a month before you get it. Now I ought to have two copies of things, the more important things, so I won't keep you waiting. However, if you will keep things in circulation, I will manage some way. Then, you have such nice manners, you are so courteous when I absolutely refuse and say I haven't got it. I want to thank you for your nice manners, and thank you for your courtesy.

Now from the standpoint of the younger child, there are other state libraries, other departments, and they are older. The Medical Library is young, so we take the hand-me-downs and we are thankful for them. We had a \$700 cut two years ago. According to the laws of physics, there is a certain momentum that carries along for a while, and I had that for about a year. However, now I am feeling the pinch of poverty. Thanks to Dr. Harken of Osceola and a number of doctors in Des Moines, Dr. Dennis Kelly, Dr. Hill, Dr. Powell, Dr. Moore, and others, and the doctors in Cedar Rapids—we got \$200 back out of the \$700 cut; thanks to you. You all brought greatly to bear upon your legislators. I am giving you big thanks for that. Two hundred dollars isn't very much. I got an Operative Gynecology at \$35, so you see \$200 doesn't go very far, but then it helps, and I am very grateful to you for the efforts you brought to bear upon the legislators. They realize that lawyers need a big library because they must consult their law books, but you doctors know everything and you must have it in your head. Therefore you don't need the library as much as a lawyer does, but we do need it.

Last of all I want to renew my thanks for the gifts you have given me this past year. I doubt if I could have carried on so well had you not given me these things. From Mason City, Dr. Harrison and Dr. Morgan gave me so many things, they sent up a truck, and their journals were up to date. Then there is Dr. Aldrich of Shenandoah. He filled up his automobile and brought in things. The doctors from all over the state sent things. I have a list of gifts that would take too long to read, but I want to thank you for the things you have given me, for the influence you had on your legislators and for the courteous way you are willing to wait. Send in your requests and I will get the material to you.

President Harkness: Do you move the approval of your report as published in the handbook?

Dr. Dean-Throckmorton: Will you please approve this report?

*The motion was regularly seconded, put to a vote and carried.*

President Harkness: We will have the report of the Committee on Military Affairs, Dr. Jensen. (Absent) The Chair will entertain a motion to approve the report as published.

#### REPORT OF COMMITTEE ON MILITARY AFFAIRS

To the officers of the Iowa State Medical Society, and the members of the House of Delegates:

Your committee on military affairs wishes to submit the following report of its activities for the fiscal year ending May 1, 1935.

When the World War was being fought, it was thought it was a war to end wars. As international affairs stand today, we can plainly see that it was simply a prelude to another catastrophe. How long our country can remain aloof from such a struggle is problematical. To those of us who served in the conflict of 1914-1918, in whatever capacity, there still remains the vivid impression of our utter unpreparedness.

In 1920 Congress passed the National Defense Act, which provides for three components of the Army of the United States; namely, the Regular Army, the National Guard, and the Organized Reserves. The Regular Army has been reduced to what amounts to an inadequate police force through the action of several sessions of Congress in an attempt to cut governmental expenses by sacrificing our national security. The National Guard has fared better. It is with the Organized Reserves that we should be chiefly concerned.

Who constitutes the Organized Reserves? There are about one hundred thousand officers in this group, consisting of those who saw service in the World War as officers, replacements from the Reserve Officers' Training Corps, and a few graduates from the Citizens Military Training Corps. It is in the last two organizations that rests the hope of the Nation in maintaining a fairly adequate supply of officers. However, what is happening to these organizations? Let us consider our own Corps Area. Propaganda of the pink pacifist and false economy has cut the ranks of the C. M. T. C. to a mere shadow of itself. Four years ago, Congress cut R. O. T. C. appropriations to such an extent that this training was discontinued for medical students. With the graduation of the 1935 classes, medical R. O. T. C. will have passed into history. To offset this, army regulations have been amended to offer medical students a basic commission upon their graduation.

In the meantime, we note that the State University of Minnesota has abolished compulsory military training, and a similar movement is on foot in our own State University at Iowa City. Both of these move-

ments are no doubt sponsored by those forces seeking to undermine and destroy our government.

Should a state of major emergency arise, the state of Iowa will be expected to furnish over 76,000 troops in the various arms and services. Over 500 medical officers would be required to care for these men. It is evident to those who served in the World War that there is a marked difference between civilian and military medicine. In the latter we are concerned not only with the care of the sick and wounded, but also with their evacuation to establishments in the rear areas, and also with the sanitation and hygiene of the entire personnel. These basic courses are only a few of the valuable lessons taught in the R. O. T. C.

In connection with the move to abolish compulsory military training your committee formulated and caused to be published in the JOURNAL and distributed to the members of the Iowa General Assembly, the following resolutions:

#### Resolutions from the Committee on Military Affairs

*Whereas*, There are definite destructive, communistic forces at work in our state educational institutions, tending to undermine our national defense policy, by eliminating compulsory military training from the curricula of the State University of Iowa at Iowa City, and the Iowa State College at Ames, and

*Whereas*, ROTC training has been withdrawn from the medical schools of this country as a measure of economy, thereby reducing the number of available medical department reserve officers, and

*Whereas*, The ROTC is the only source of reserve officers who would be required to train our citizen army in time of a major emergency.

*Be It Therefore Resolved*, That the Iowa State Medical Society, through its Committee on Military Affairs, go on record as opposed to the withdrawal of ROTC training from the medical schools, and urges its restoration, and

*Be It Further Resolved*, That the Iowa State Medical Society, through its Committee on Military Affairs, go on record as opposed to the abolition of compulsory military training in our state institutions of higher education, and urges its retention as necessary for the functioning of our national defense policy, and

*Be It Further Resolved*, That a copy of this resolution be sent to each state senator and state representative at Washington, and to each member of the Iowa Assembly, and that it be reproduced in the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY.

Thos. F. Suchomel, Chairman,  
Harold A. Spilman,  
Arnold L. Jensen,  
Committee on Military Affairs of the  
Iowa State Medical Society.

Replacements must be available in times of peace as well as in war. Many of our officers who saw World War service are rapidly approaching retirement age and not a few have already passed on to that great beyond. Where are these replacements to come from? Heretofore, they came mostly from medical R. O. T. C. graduates, a source which will be cut off shortly.

Thus, it is up to the young physician and recent graduates to apply for commissions in the Medical Department Reserve. Especially should the young men in the cities avail themselves of this opportunity.

We must also consider the older men who are holding commissions as a reward for World War service. It is absolutely essential that these men avail themselves of the extension courses offered by the War Department in order to keep informed of the changes in the tactics and technic of the Medical Department. There is as much difference between the present set-up of the Medical Department and that in vogue during the World War as there is between night and day. Prior to October, 1930, promotion could be obtained by showing 300 hours of active duty credit, regardless of how that credit had been earned. Many promotions were made on a basis of three camps of 100 hours each. This condition has been remedied and evidence of completion of definite extension courses is now necessary in order to qualify the individual for a promotion.

Your committee, therefore, submits to the House of Delegates the following recommendations for endorsement:

1. That young physically fit physicians apply for commissions in the Medical Reserve Corps.

2. That medical students be urged to accept commissions in the Medical Reserve Corps upon graduation.

3. That all Medical Reserve Corps Officers be urged to enroll in the extension courses offered to Medical Reserve Officers by the War Department.

4. That the House of Delegates endorse the resolution as published in the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY in January, 1935.

Your committee also wishes to report on the last meeting of the Military Surgeons Club of the Iowa State Medical Society.

The meeting was held on Wednesday, May 9, 1934, at the Des Moines Club, preceded by a splendid dinner. The officers expressed their disappointment at the small attendance, as reservations had been made for 60. The nominating committee reported the following names as officers of the club for the year 1934-1935:

Thos. F. Suchomel, Captain Medical Reserves, Cedar Rapids, Iowa, President.

Lt. Col. H. A. Spilman, Ottumwa, Iowa, Vice President.

Captain Arnold L. Jensen, Council Bluffs, Iowa, Secretary.

At this meeting two very interesting talks were given:

Lt. Col. W. Lee Hart, Medical Corps, U. S. A., addressed the club on the subject: "Duties of the Medical Officer in the Times of Peace."

Lt. Commander R. H. Hunt, Medical Corps, U. S. N., gave a most interesting discourse on "Medical Service in the Tropics."

Following these two most instructive papers, a gen-



eral discussion prevailed. No further business being brought up, the meeting was adjourned to meet at Davenport, Iowa, May 8, 1935.

Thos. F. Suchomel, Chairman  
H. A. Spilman  
Arnold L. Jensen, Secretary

Dr. Suchomel: Dr. Jensen is not here. I want to *move* the approval of the report as printed on page 51 in the handbook.

*The motion was regularly seconded, put to a vote and carried.*

President Harkness: The next is the report from the Woman's Auxiliary Advisory Committee, Dr. Johnson of Council Bluffs. (Absent) The Chair will entertain a motion to approve the report.

#### REPORT OF THE WOMAN'S AUXILIARY ADVISORY COMMITTEE

House of Delegates:

I regret very much having to report that our committee has not been very active during the past year but there has been very little in the way of activity that has seemed to come under our jurisdiction. Dr. Walter E. Baker of Des Moines was appointed as the active representative of our committee.

At every important medical meeting in my own section of the state, southwestern Iowa, I have called the attention of those present to this Woman's Auxiliary Advisory Committee and have asked for suggestions as to ways in which it might function more actively, but no suggestions were given. These meetings included meetings in Council Bluffs, Atlantic, Audubon; one a district meeting and the other two local meetings. I have also served on the Inter-relations Committee of the Pottawattamie County Medical Society and the Woman's Auxiliary to the Pottawattamie County Medical Society. It is my opinion that the Auxiliary has a definite place in our organization and can render some important services, both to the profession and to the community.

We regret that we have not accomplished anything definite but feel that we did all that was indicated as coming under our jurisdiction.

Aldis A. Johnson, Chairman

Dr. Erskine: I *move* it be approved.

President Harkness: It has been *moved* and seconded that the report as published in the handbook be approved. Those in favor signify by the usual sign; opposed. *It is carried.*

Memorials and Communications is the next item. There are at the present time about five state medical societies in session while we are in session. The secretary will be very much pleased if somebody would move that he be authorized to communicate and felicitate those organizations and send them our good wishes.

Dr. Spilman: I so *move*.

*The motion was regularly seconded, put to a vote and carried.*

President Harkness: Is there any new business?

Dr. Hanna: I should like to know at what stage it is constitutional to introduce the name of a doctor

who has been a practitioner, a member of the Society, for twenty years, for Life Membership. I believe the State Society makes a doctor who has been in service twenty years, a Life Member.

President Harkness: Thirty years at the present time. The secretary informs me that he has several names to bring up on Friday. If you have any, will you communicate with the secretary, Dr. Hanna?

Dr. C. L. Heald: Every doctor of medicine and surgeon who has had much experience with appendicitis knows that when he hits a case of perforated appendix, in all probability somebody has given the patient a cathartic. In a recent survey of appendicitis in the hospitals of Philadelphia, Dr. John Bauer found that of 481 deaths from appendicitis, during the period of four years, 437 had taken a cathartic. Those figures speak with an eloquence greater than any words of mine. I wish to offer this following resolution for your consideration:

*"Whereas, The present high mortality from appendicitis is due chiefly to delay in operation and to the universal custom among the laity of giving a cathartic for abdominal pain, and*

*"Whereas, The persistent efforts that have been made hitherto by the medical profession to inform the public on this point have been mostly unavailing, and*

*"Whereas, In practically every case of perforation of the appendix, a cathartic had been given; therefore be it*

*"Resolved, That, as a simple, direct means of informing the public of this danger, a law should be enacted requiring that a warning label be placed on all cathartic medicines sold to the public bearing this legend:*

*"'WARNING: Do not give this or any other laxative for pain in the stomach or abdomen except upon the advice of your physician. If it should be appendicitis, a laxative would be dangerous.'"*

Dr. Suchomel: I *move* that the resolution be received and given to the Committee on Public Policy and Legislation for their consideration.

*The motion was regularly seconded.*

President Harkness: It has been *moved* and seconded that this resolution be received and given to the Committee on Public Policy and Legislation for their consideration. Are there any remarks? Those in favor of this commitment signify by the usual sign; opposed. *It is carried.*

We now come to the election of the Committee on Nominations. I wish to state that we have signs around here for each district. You know the delegates from each district meet and nominate a member to form the Committee on Nominations. It is necessary that the Secretary know whom you nominate, so after you have elected a member from your district to serve on the Committee on Nominations, be sure and notify the secretary.

The Chair will entertain a motion to adjourn.

Upon motion regularly made, seconded and carried, the meeting adjourned at five thirty-five o'clock.

## Friday, May 10

The second session convened at eight-thirty o'clock, President Harkness presiding.

President Harkness: We will come to order. The secretary will call the roll.

Secretary Parker called the roll.\*

President Harkness: We will proceed to the reading of the minutes, Mr. Secretary.

Secretary Parker read the minutes of the meeting of May 8, 1935.

President Harkness: Are there any objections to the minutes as read? If not, they stand approved. We are now ready for the report of the Committee on Nominations.

Dr. Bush Houston: The Nominating Committee submits the following names:

President-elect, Prince E. Sawyer, Sioux City; Lee R. Woodward, Mason City; John C. Parsons, Creston; First Vice-President, James C. Hill, Newton; Second Vice-President, Raymond E. Peck, Davenport; Trustee, E. M. Myers, Boone; Councilor, Fourth District, James E. Reeder, Sioux City; Councilor, Ninth District, Harold A. Spilman, Ottumwa; Delegate to American Medical Association, Fred Moore, Des Moines; Alternate Delegate to American Medical Association, E. M. MacEwen, Iowa City.

The meeting place for the 1936 convention is recommended to be Des Moines. The time is recommended to be the second Wednesday, Thursday and Friday of May, provided said dates do not interfere with the meeting of the American Medical Association.

Dr. T. F. Suchomel: I *move* that the report of the Nominating Committee be received.

*The motion was regularly seconded, put to a vote and carried.*

President Harkness: Are there any nominations from the floor? If not, we will proceed to ballot for president-elect.

Dr. Frank M. Fuller: Mr. President, I may be out of order, but there are a good many men who have a long drive to make and a good many others who want to hear the program of our guests. In view of the fact that there is only one nominee for the other offices, I *move* that the by-laws be suspended and the secretary be instructed to cast the unanimous ballot for the other candidates nominated on the nominating committee's report.

*The motion was regularly seconded.*

President Harkness: You move that as a suspension of the rules, and that the secretary be instructed to cast the unanimous ballot for the nominees, in view of the fact that the report of the nominating committee includes only one nominee for each of the other offices?

Dr. Fuller: Yes.

President Harkness: It has been *moved* and *seconded* that the by-laws be suspended and that the secretary be instructed to cast the vote for these officers as named in the nominating committee report. The secretary will read those names.

Secretary Parker: The list of officers to be included is: First Vice-President, James C. Hill, Newton; Second Vice-President, Raymond E. Peck, Davenport; Trustee, Edward M. Meyers, Boone; Fourth District Councilor, James E. Reeder, Sioux City; Ninth District Councilor, Harold A. Spilman, Ottumwa; Delegate to the American Medical Association, Fred Moore, Des Moines; Alternate Delegate to American Medical Association, E. M. MacEwen, Iowa City; meeting place for the 1936 convention, Des Moines, the second Wednesday, Thursday and Friday in May, provided it does not interfere with the American Medical Association meeting.

President Harkness: You have heard the motion and you have had read to you the list of the nominees included. Are there any remarks?

The question was called for.

President Harkness: All those in favor stand. That has to be unanimous. *The motion is carried*, Mr. Secretary.

Secretary Parker: The secretary has followed the instructions and casts the unanimous vote for the nominees whose names were included in the motion.

President Harkness: The president declares the nominees elected whose names were set forth in the motion.

We will announce the result of the balloting for president-elect. There were 73 votes cast: Dr. Woodward, 34; Dr. Sawyer, 33; Dr. Parsons, 6. No candidate received a majority. We will reballot on the two highest.

The reballot was taken.

President Harkness: The results on the second ballot are as follows: votes cast, 74; Dr. Sawyer, 42; Dr. Woodward, 32. You have elected Dr. Sawyer of Sioux City as your president-elect.

Dr. A. D. Woods: Mr. President, I *move* that this House give one unanimous ballot to Prince Sawyer.

*The motion was regularly seconded and carried.*

A unanimous vote was accorded Dr. Sawyer.

President Harkness: We will now proceed to the reports of the committees. The Committee on Constitution and By-Laws—Dr. Brock, do you have any further report?

Dr. Brock: Nothing except what I have asked Dr. Parker to take care of.

Secretary Parker: The Committee on Constitution and By-Laws has requested me to present these amendments to the Constitution for the first reading, to be voted on at the 1936 session.

The first is Article VIII, Section 2. Add, "The President-Elect shall enter upon the duties of the presidency one year from the date of his election." Article VIII, Section 4, omit in its entirety.

Dr. Fuller: May we have read the section that is to be omitted?

Secretary Parker: Section 4, Article VIII, as follows: "At the election of officers at the session of 1915 there shall be elected a President who shall enter upon the duties of his office at once, and also a President-Elect who shall enter upon the duties of the presidency one year later. Thereafter, the

\* The official roll call consisted of: delegates, fifty; alternates, eight; officers, seventeen; total, seventy-five.



president-elect shall enter upon the duties of the presidency one year from the date of his election."

Dr. Fuller: Just to correct a little apparent difficulty in that, this resolution states that he shall enter upon his office one year from the date of his election. If anyone wanted to, they might say that he should enter exactly a year from the date. I suggest to the maker of that amendment that it state that the president-elect shall enter upon his duties at the end of the session succeeding his election. That would clear that up.

Secretary Parker: We tried to use the same nomenclature in the proposed amendment that was used in the section we are trying to delete so there would be no misunderstanding. In Section 4 it says, "who shall enter upon the duties of the presidency one year later."

Dr. Fuller: I think Dr. Fuller's suggestion is very good. Suppose we have a meeting on the eighth of May next year. Our president-elect would not be taking office a year later.

President Harkness: Dr. Brock, did you hear that? Dr. Fuller is asking your consent to change the wording. Repeat your wording, Dr. Fuller.

Dr. Fuller: That the amendment read that the president-elect take office on the last day of the session succeeding that in which he is elected. That will fix it so at the last session, like today, he will enter into his duties regardless of the date of his election.

Dr. Brock: I think the point is well taken, and I will be glad to accept that.

President Harkness: If there is no objection the wording will be changed in receiving this report.

Dr. John T. Hanna: Mr. President, as long as the House is getting technical, I think you should say the annual session. There may be a special session.

President Harkness: Your point is well taken, Dr. Hanna. Dr. Brock, do you have any objection?

Dr. Brock: I accept that.

President Harkness: It is not necessary to vote on this. It will be received to be voted on at the next annual session.

We have to act, Dr. Brock, on the proposed changes in the By-Laws. Mr. Secretary, will you read the proposed changes as received in our first session this year.

Secretary Parker: Chapter I, Section 1, be made Section 2, Section 2 be made Section 3, etc., etc., all through this chapter and the following section be enacted and named Section 1: "This Society shall consist of Members, Associate Members, Delegates, and Life Members.

"a. Members—The members of this Society shall be the members of the component county medical societies.

"b. Associate Members—Teachers in any regular medical school, resident in Iowa, in no manner engaged in the practice of medicine, and not otherwise eligible to regular membership, may become associate members of this Society, when elected associate members of the component society of the county in which

said teachers live. Such members shall be designated associate members; they shall enjoy the same privileges as regular members and shall be subject to the same conditions.

"c. Delegates—Delegates shall be those members who are elected in accordance with this constitution and by-laws to represent their respective component county societies in the House of Delegates of this Society.

"d. Life Members—as defined in the constitution."

I might add that you have adopted the amendment to the Constitution, so it is necessary that this amendment to the By-laws be adopted in order to classify your membership.

Mr. President, I *move* the adoption of the new Section 1.

*The motion was regularly seconded.*

President Harkness: It is *moved* and seconded that the proposed changes as read by the Secretary, which will become Section 1 of Chapter I of the By-laws, be adopted. I think the purpose of this is clear in your mind. The classification of membership has been taken out by your vote from the Constitution, and this stipulates the classification.

*The question was put to a vote and carried.*

Secretary Parker: Chapter I, Section 4 (Section 5 since above amendment is enacted) "The words 'enter his name on the registration book' in line 2 be deleted and the following words substituted therefor: 'be registered'." (For several years, owing to the heavy registration, we have used a card registration system rather than a registration book. This amendment should be enacted in order that our Constitution and By-laws will conform with established custom.) Mr. President, I *move* the adoption of this section as amended.

*The motion was regularly seconded.*

President Harkness: The essence of this is simply that in the By-laws it says his name shall be entered on the registration book and our present practice does not comply with our By-laws.

*The question was called for, put to a vote and carried.*

Secretary Parker: "Chapter VI, Section 4. The words 'and shall be paid quarterly' be deleted from line 34." I *move* the adoption of this section as amended.

*The motion was regularly seconded and carried.*

Secretary Parker: "Chapter XIV, Section 4. The words 'and shall be paid quarterly' be deleted from line 3." I *move* the adoption of this amendment.

*The motion was regularly seconded and carried.*

Secretary Parker: "Chapter XIV, Section 6. The word 'quarterly' be deleted from line 4." I *move* its adoption.

*The motion was regularly seconded and carried.*

Secretary Parker: "Chapter IV, Section 9. The words 'who are not members of the House of Delegates' be deleted from lines 3 and 4."

(Because of this wording, a committee appointed a couple of years ago from members of the House of Delegates was declared illegal. The real intent of this section was to allow the House of Delegates to appoint committees from either the members or non-members of the House of Delegates. This amendment will clarify this situation.) I *move* its adoption.

*The motion was regularly seconded.*

Dr. Erskine: I should like the original section read and the section as amended by the proposed amendment.

President Harkness: Mr. Secretary, will you read the original section?

Secretary Parker: "It (referring to the House of Delegates) shall have authority to appoint committees for special purposes from among members of the Society who are not members of the House of Delegates, and such committees may report to the House of Delegates in person, and may participate in the debate thereon."

As amended it would read: "It shall have authority to appoint committees for special purposes from among members of the Society, and such committees may report to the House of Delegates in person, and may participate in the debate thereon."

President Harkness: It is *moved* and seconded that this change as read be adopted.

*The question was put to a vote and carried.*

Secretary Parker: "Chapter VIII, Section 1. Add a line containing the words 'A Committee on Medical Economics,' as line 12 of this section."

(At present the Committee on Medical Economics is a special committee of the House of Delegates. Such an important committee should be made a standing committee.) I *move* its adoption.

*The motion was regularly seconded and carried.*

Secretary Parker: "Chapter VIII. Add a section 11, which will define the duties of the above Medical Economics Committee, as follows: 'The Committee on Medical Economics shall consist of three members whose duty shall be to investigate matters affecting the economic status of the medical profession of the state and it shall report annually to the House of Delegates such recommendations as may in its judgment be proper.'" I *move* its adoption, Mr. President.

*The motion was regularly seconded and carried.*

Secretary Parker: "Chapter VIII, Section 1. Add a line, which will be line 13, containing the words: 'A Committee on Medical Education and Hospitals.'" "

(This committee was made a standing committee of the House of Delegates by resolution passed by the House in 1932 but it must be done by amending the By-laws as outlined above.) I *move* its adoption, Mr. President.

*The motion was regularly seconded and carried.*

Secretary Parker: "Chapter VIII. Add a Section 12, defining the duties of the above Committee on Medical Education and Hospitals, as follows: 'The Committee on Medical Education and Hospitals shall consist of three members, who shall serve in this

state in a similar capacity as the Council on Medical Education and Hospitals does for the American Medical Association and shall have referred to it all questions pertaining to hospitals and medical education.'" Mr. President, I *move* its adoption.

*The motion was regularly seconded and carried.*

President Harkness: The Committee on Finance, Medico-Legal Committee, Committee on Publications, Committee on Necrology, Committee on Public Policy and Legislation—Dr. Moore, have you anything to add?

Dr. Moore: Is this the proper time to discuss some recommendations for next year?

President Harkness: I think it is, Dr. Moore, if they are specific.

Dr. Moore: If it is, I would like Dr. Bernard to address the House.

Dr. Ransom D. Bernard: Gentlemen, your Committee on Legislation has the following recommendations: Inasmuch as the legislature has adjourned and the members are back home, our first suggestion is that you consult the chart which was sent to every one of you, check this very carefully and have a talk with your legislator and ask him pertinent questions. Get his reaction to how things were conducted down there by this committee and ask his reaction to the two bills that are influencing us particularly. We would appreciate your writing us his reaction. In that letter we would also appreciate your reaction to his reaction. Is that clear?

The second recommendation: Now is the time to start the work on the next legislature. You are familiar with some of these men. Formulate some plan of your own as to how it should be handled and we will cooperate with you in every possible way. In some of the counties you are well organized and the professional groups are working, yet it is impossible to turn the trick. We wish to cooperate with you. We will consult with you at home, in your offices—any way you see fit to handle these men. In the Senate I think you are as familiar with the list as we are. We will give you the same cooperation as we do with the members in the House. That is all we have to offer. Thank you for your cooperation last year.

Dr. E. C. Junger: What if we don't get any reaction from these fellows?

Dr. Bernard: Tell us about that.

Dr. C. W. Ellyson: We, in our territory, who are consulted at the time during the session of the legislature and between times, have difficulty in contacting these men. I understand that practically every county has a set-up for a committee on medical legislation and education, and there has been a suggestion that a number of counties get busy and see that these committees be appointed as a part either of the legislative committee and its activities or of the various inter-professional groups. In other words, get an active local legislative committee. That is just a suggestion.

President Harkness: You do not make that as a motion?

Dr. Ellyson: No.



President Harkness: Is there nothing further to report?

Secretary Parker: There was a resolution introduced by Dr. Heald and referred to the Committee on Public Policy and Legislation: "*Whereas*: The present high mortality from appendicitis is due chiefly to delay in operation and to the universal custom among the laity of giving a cathartic for abdominal pain, and

"*Whereas*: The persistent efforts that have been made hitherto by the medical profession to inform the public on this point have been mostly unavailing, and,

"*Whereas*: In practically every case of perforation of the appendix a cathartic had been given, therefore be it

"*Resolved*, that as a simple, direct means of informing the public of this danger, a law should be enacted requiring that a warning label be placed on all cathartic medicines sold to the public bearing this legend:

"*Warning*: Do not give this or any other laxative for pain in the stomach or abdomen except upon the advice of your physician.

"If it should be appendicitis a laxative would be dangerous.'" This was returned to the House of Delegates without recommendation, by the Committee on Public Policy and Legislation. I *move*, Mr. President, that the resolution be tabled.

President Harkness: It is *moved* that the resolution as read be tabled.

Dr. John I. Marker: I would like to know what the purpose is in tabling that. Is it to come up at the next meeting, or is it indefinite postponement that you have in mind? If you lay it on the table, it comes up at the meeting next year. Do we want that, or an indefinite postponement?

President Harkness: What is your pleasure, Dr. Parker?

Secretary Parker: The purpose of it is to stop discussion. Since that motion has not been seconded I will introduce a new one, that it be postponed indefinitely.

*The motion was regularly seconded and carried.*

President Harkness: The Committee on Child Health and Protection—does this committee have any further report? The Historical Committee — The Committee on Medical Economics, Dr. Thornton?

Dr. Fuller: Mr. Chairman, may I just go back to that Historical Committee for a moment? I would like to suggest that it is extremely important for the history of medicine in Iowa to be recorded. The only way we can have an accurate record is for the men in the various counties to take an interest and look up the pertinent facts. We earnestly ask that you interest yourselves in the history of medicine in the different counties and get that history now. That is an express request from the committee and anyone who has any facts of medical history in Iowa will receive the appreciation of the committee if they

will give it to us. We will submit it to the JOURNAL for publication, as we have from a number of counties.

President Harkness: The Committee on Medical Economics, Dr. Thornton.

Dr. T. F. Thornton (Waterloo): Mr. President, I *move* that that portion of the Medical Economics Committee report in the handbook on page 50, which refers to the laboratory, be reconsidered.

*The motion was regularly seconded and carried.*

Dr. Bernard: Turn to page 50, the second paragraph in the left-hand column, the portion under consideration starts with the sentence, "In considering the resolution drawn up by the laboratory men throughout the state," etc., at the bottom of that column is a new schedule of laboratory fees. I think you have all read those and are thoroughly conversant with them. At the top of the next column, "The Medical Economics Committee also agreed to recommend that the House of Delegates recommend that the legislature make an appropriation to the State Laboratory for the free service given to the indigent." In view of the fact that this has not met with universal accord, by eliminating this particular portion of the Economics Committee report, the rest of the report will stand. I *move*, Mr. President, that that portion of the Medical Economics Committee's report beginning with the paragraph "In considering the resolution drawn," to and including the paragraph, "The Medical Economics Committee also agreed," on page 50, be laid on the table.

*The motion was regularly seconded.*

President Harkness: It has been moved and seconded that this paragraph "In considering the resolution," to and including the paragraph beginning, "The Medical Economics Committee also agreed," on page 50 of the handbook, be laid on the table.

*The question was put to a vote and carried.*

Dr. Marker: I would like to know what the intent of this motion is, whether we are to discuss this when we meet again next year or whether it is indefinite postponement we have in mind.

President Harkness: It has been laid on the table. It has been indefinitely postponed. It can be discussed next year.

Dr. Marker: I *move* indefinite postponement. We won't have to argue about it next year.

Dr. Moore: Is the motion in order?

*The motion was regularly seconded.*

Dr. E. E. Shaw: Point of order, Mr. President.

President Harkness: The Chair rules that after a motion to lay this on the table, a motion to postpone it is out of order.

Dr. L. C. Howe: The vote ought to be reconsidered because we won't be any further ahead a year from now. I *move* we reconsider.

Dr. Hanna: What difference does it make? It will be up for discussion all the same.

President Harkness: Was there a second to your reconsideration motion? A reconsideration will require a two-thirds vote.

Dr. Fuller: I rise to a point of order. The gentleman who made the motion to reconsider should vote in favor or against the motion to lay it on the table.

Dr. Marker: The vote was announced. There were no "noes".

Dr. Moore: In laying this on the table, does it automatically continue as a subject for study and investigation by the committee?

President Harkness: The committee will go ahead and study this. That is within their province if they desire.

Dr. Moore: Is it in order to move that they continue the study of this question and report again?

President Harkness: It will be after we take this vote on the reconsideration.

*The question of reconsideration was put to a vote and lost.*

President Harkness: Dr. Thornton, is there anything else?

Dr. Thornton: Nothing else.

President Harkness: The Committee on Medical Education and Hospitals, Dr. Erskine.

Dr. Hanna: I rise to a point of order. I believe the report of the Committee on Medical Economics is up for reconsideration and the report was not approved since it has been up for reconsideration.

President Harkness: Your point is that in reconsidering a part of this report we reconsidered all of it?

Dr. Hanna: The whole report was reconsidered and part of it was laid on the table.

President Harkness: The whole report was not reconsidered.

Dr. Hanna: It sounded that way back here.

President Harkness: The Chair is not arbitrary, if you want to put it to a vote, but that was the intent, that it was to be a reconsideration of that particular part of the report, and that part has been deleted.

The Committee on Medical Education and Hospitals, Dr. Erskine.

Dr. Erskine: A number of hospitals in the state and medical societies are anxious to try the experiment of providing hospital care on a group insurance plan. A resolution has been presented to the committee and the committee has added certain conditions to the resolution and believes that the resolution can be safely adopted. I shall read it.

"Be it resolved: That the House of Delegates of the Iowa State Medical Society endorse the principle of group payment for hospital care on a non-profit basis, and recommend the trial of such plans under the following conditions:

"1. Non-profit sponsorship and control.

"2. Approval of the county medical society.

"3. Free choice of physicians.

"4. Free choice of hospitals.

"5. Admission to hospital only upon recommendation of a medical practitioner and treatment only while under his care.

"6. No fees for physicians nor indemnity for patients to be included."

I move the adoption of that resolution.

*The motion was regularly seconded.*

President Harkness: It is moved and seconded that the resolution be adopted. Are there any remarks?

Dr. Clyde A. Boice: Will not that conflict with the insurance laws of the state of Iowa? My information is that if you start that kind of insurance, you have to start an insurance society. My information is that that will conflict with the state insurance laws.

President Harkness: It is not for us to decide. That is for the insurance department.

Dr. Boice: We don't want to start anything that is not legal.

President Harkness: Your resolution presumes that nothing would be started but what would have legal standing, does it not?

Dr. Erskine: Yes. I understand that the insurance department has ruled that such group insurance plans must be started as mutual insurance societies, non-profit—we say non-profit, they say mutual insurance.

Dr. Marker: I would like to ask Dr. Erskine if he proposes that fees for laboratory and x-ray work are not included in the group hospital plan. That has been a question where group insurance has been taken up and doctors have split on whether or not those fees are included or the fee includes only hospitalization, that those others are part of the professional service.

Dr. Erskine: Mr. President, that was expressly left to the discretion of the county medical society in such places where it would be tried.

Dr. M. C. Hennessy: Is not this subject being handled and studied by the American Medical Association? If it is, I think we are a little bit hasty in taking any action on that recommendation until they give us their report on their survey and recommendations.

President Harkness: Is there further discussion?

*The question was called for and put to a vote.*

President Harkness: The Chair is unable to decide. Those in favor raise their hands. *The motion is definitely lost.*

Have you anything further, Dr. Erskine?

Dr. Erskine: No.

President Harkness: The Medical Library Committee, the Committee on Military Affairs, Woman's Auxiliary Advisory Committee—

We now come to unfinished business. What unfinished business have we?

Secretary Parker: Mr. President, we have a number of applications for life membership, but since the House has amended the By-laws and made it more specific regarding the definition for life membership, it will be necessary for the office to look up the records of these applications for life membership before ruling can be made by the central office. The Constitution and By-laws as now amended, clarifying the question of life membership, reads, "Life mem-



bers shall be those members who have been in good standing for a period of thirty or more successive years prior to the application for life membership and who are recommended for life membership to the House of Delegates by a vote of their county medical society."

President Harkness: That is to be voted on next year.

Secretary Parker: Mr. President, the Secretary is out of order. We have a few applications for life membership which I will present. From Decatur County Medical Society there is a memorandum of a vote recommending Drs. Guy P. Reed, J. W. Wailes and J. S. Koontz. Mr. President, I *move* that these applications be accepted.

*The motion was regularly seconded.*

President Harkness: It is moved and seconded that these physicians whose names were read be made life members of this society.

*The question was put to a vote and carried.*

Secretary Parker: I have the name, Mr. President, of Dr. Lynn B. Bacon, seventy-eight years old, retired. There is a petition for life membership for Dr. Bacon of Mills County. I *move* that he be made a life member.

*The motion was regularly seconded and carried.*

Secretary Parker: Dr. E. E. Harris of Poweshiek County has been for many years a faithful secretary and is now incapacitated. Poweshiek County has petitioned for life membership for Dr. Harris. I *move* it be granted.

*The motion was regularly seconded and carried.*

Dr. E. B. Williams: There were four other members from Poweshiek County. Weren't they recommended?

President Harkness: The applications must be made formally in writing. We did not receive them. I do not believe they could be considered at this time.

We come now to new business. Dr. Hennessy.

Dr. Felix A. Hennessy: I have been delegated to present a little matter before this group by the Chairman of the Speakers Bureau. A rather sad thing occurred during the year in our work. One of the members of the College of Medicine was killed while doing work for his society, and the Speakers Bureau as a whole. Various members of the groups have felt that some memorial should be established to commemorate the services of this man, who was cut down in his prime. I would like the reaction of the House of Delegates to a thought I am going to express. I will not make it in the form of a motion until I get a reaction. We would like to establish the Baldrige Memorial Fund in the College of Medicine in the University of Iowa, that fifty dollars be given as a prize to the student who submits the best thesis on medicine. The management of this fund and the action of it will be determined by a committee of three, selected by the House of Delegates. I will ask the House of Delegates to authorize the Board of Trustees to appropriate this fund.

President Harkness: Dr. Hennessy, has the Board of Trustees authorized such an expenditure?

Dr. Hennessy: They haven't officially, no.

President Harkness: Will the Board of Trustees discuss this right away?

Dr. Fay: The Board of Trustees unanimously approves of the appropriation of fifty dollars for purposes as suggested by Doctor Hennessy.

President Harkness: The essence of it is: It is a fifty dollar prize known as the Baldrige Memorial Prize to be awarded some medical student for some thesis he may present. Do you want this committee to decide or do you want the faculty of the College of Medicine to decide as to the winner.

Dr. Hennessy: From conferences I have had both ways, I think it advisable that a committee be appointed from the Iowa State Medical Society to pass on it. I think the University would like to be relieved of that responsibility.

President Harkness: It is within the power of the committee to leave the type of thesis to the faculty?

Dr. Hennessy: It is necessary to decide on the type of thesis for this reason: It can't be done in the field of internal medicine alone. There might be some advanced boy doing work in some field other than internal medicine. To leave it in one field seems inadvisable because there may be advances in other fields.

President Harkness: You made your suggestion in the form of a motion?

Dr. Hennessy: I will so *move*.

*The motion was regularly seconded and carried.*

President Harkness: This will now necessitate the appointment of this special committee from the House of Delegates. It is customary, you know, for the incoming President to name, or rather suggest, the committees for next year. They have to receive the approval of the House of Delegates. You have by this vote created another special committee. I feel that as a courtesy to the incoming President he should name this committee for your approval.

Is there any other new business?

Dr. Hanna: Mr. President, after conferring with you, I still think I will bring up this point. Des Moines County last year, in the care of the indigent, spent \$72,000, which we were told was excessive from one quarter, and from another quarter came the inquiry, "How did you get that much?" I thought I had better make a little report as to how that money was obtained and how it was expended, inasmuch as some of the counties were not being overpaid in the care of the indigent. We dealt directly with the Board of Supervisors. This is how it will wind up; \$40,000 for hospital care, \$4,000 for drug bills, \$2,000 to dentists, \$26,000 to the physicians. On the basis of case loads, it would figure out \$2.21 plus, per case load, as compared to \$1.15 that the federal relief people offer to southwestern Iowa, for example, but there were a number of so-called statutory poor treated along with this. The estimate that we make would run thirty to fifty per cent more that are not accounted for on our case load. Our case load for the

year was 11,734 separate families. We weren't told one way or another how well we did or how poorly we did, and what kind of business men we were. For the benefit of those who didn't know, we have no apologies to make. We think we were good business men.

President Harkness: I am going to ask the incoming President to say a few words, after which Dr. Parker will read the recommendations of the incoming President for committee appointments. Old man Tom Burcham forgot his glasses and cannot read his own incoming committee recommendations.

President-Elect Burcham: I have been coming to this House of Delegates for a good many years. It is certainly a pleasure to see the method in which you are handling the business of your society at the present time, in comparison with a few years past. I have often thought if we could speed this thing up somewhat and still, at the same time, give every man an opportunity to express himself here on the floor, that we would do a good service to ourselves and not be tied up here so long at a time, but I don't see how we can do it any better than we have this year, Dr. Harkness. You have conducted the affairs of this House in a very fine manner. I only hope I will be able to conduct them as well, myself. I haven't anything more to say at this time. Dr. Parker will read the appointments.

Secretary Parker: "The following names are submitted for committee members for your consideration:

#### CONSTITUTION AND BY-LAWS

W. R. Brock, Chairman.....Sheldon  
John H. Henkin.....Sioux City  
W. A. Sternberg.....Mt. Pleasant

#### FINANCE

Ernest C. McClure, Chairman.....Bussey  
Leslie L. Carr.....Clermont  
A. S. Bowers.....Orient

#### MEDICO-LEGAL

Frank A. Ely, Chairman.....Des Moines  
George C. Albright.....Iowa City  
F. Earl Bellinger.....Council Bluffs

#### PUBLIC POLICY AND LEGISLATION

Fred Moore, Chairman.....Des Moines  
R. D. Bernard.....Clarion  
S. W. Corbin.....Millerton

#### MEDICAL EDUCATION AND HOSPITALS

A. W. Erskine, Chairman.....Cedar Rapids  
T. J. Irish.....Forest City  
B. J. Dierker.....Ft. Madison

#### COMMITTEE ON CHILD HEALTH AND PROTECTION

R. H. McBride, Chairman.....Sioux City  
E. D. Plass.....Iowa City  
H. E. Farnsworth.....Storm Lake  
Lee Forrest Hill.....Des Moines  
Howard A. Weis.....Davenport  
C. P. Phillips.....Muscatine  
Roland Stahr.....Fort Dodge

#### HISTORICAL COMMITTEE

Walter L. Bierring, Chairman.....Des Moines  
Frank M. Fuller.....Keokuk  
Tom B. Throckmorton.....Des Moines  
John T. McClintock.....Iowa City  
Paul W. Van Metre.....Rockwell City  
William Jepson.....Sioux City

#### MEDICAL ECONOMICS

T. F. Thornton, Chairman.....Waterloo  
James C. Hill.....Newton  
James C. Donahue.....Centerville

#### MEDICAL LIBRARY

Con R. Harken, Chairman.....Osceola  
Carl L. Gillies.....Iowa City  
Jeanette Dean-Throckmorton.....Des Moines

#### MILITARY AFFAIRS

T. F. Suchomel, Chairman.....Cedar Rapids  
Harold L. Spilman.....Ottumwa  
Arnold L. Jensen.....Council Bluffs

#### WOMAN'S AUXILIARY ADVISORY COMMITTEE

Aldis A. Johnson, Chairman.....Council Bluffs  
Joseph H. Kinnaman.....Des Moines  
Charles F. Snopek.....Cresco  
W. T. Peters.....Burt  
T. J. Wigim.....Muscatine

I will read the incoming President's appointments for chairmen of the sections. These are not a part of the committee list, but I will read them to you.

Chairman of the Medical Section—B. F. Wolverton, Cedar Rapids.

Chairman of the Surgical Section—Earl B. Bush, Ames.

Chairman of the Eye, Ear, Nose and Throat Section—Cecil C. Jones, Des Moines.

Mr. President, I move that the committee recommendations of the President-Elect be approved.

President Harkness: The last three do not require it.

*The motion was regularly seconded and carried.*

Secretary Parker: The President-Elect has selected as the Baldrige Memorial Committee, Drs. D. J. Glomset, E. M. Meyers and E. D. Plass. I move the approval.

*The motion was regularly seconded and carried.*

President-Elect Burcham: I hope you have all seen the scientific exhibit upstairs this year. This is the first year we have undertaken anything of this kind. Dr. Harkness passed that off to me and I passed it on to some very good men, Dr. McNamara, Dr. Peck and Dr. Lamb. I want an expression from the House as to whether you want this exhibit continued. When we talked about a scientific exhibit I went to the Board of Trustees and they told me I could have a certain amount of money, not to exceed \$500, for this committee. As nearly as I can check on it, the expenses of the exhibit will be less than \$200 and I think you should have an expression from this House as to whether you want the exhibit continued next



year and the approval of the Board of Trustees in appropriating that money. If so, there will be a special committee to look after it.

President Harkness: The Chair will entertain a motion approving or disapproving the efforts made regarding the scientific exhibit.

Dr. Spilman: In order to get this before the House, I *move* a committee be appointed to continue the activities in the scientific exhibit for the succeeding meetings, and the necessary expenditure be authorized by the Board of Trustees.

*The motion was regularly seconded and carried.*

President Harkness: Dr. Burcham, are you ready to suggest the members of the committee?

President-Elect Burcham: Dr. McNamara of Dubuque, Dr. Lamb of Davenport and Dr. Parker, Sec-

retary of the Society, because I want him to look after the expense and particularly the transportation.

Dr. Spilman: I *move* the approval of this committee.

*The motion was regularly seconded and carried.*

President Harkness: Is there anything else, Mr. Secretary? Does any delegate have anything further he wishes to bring before this body? I want to take this occasion to thank every delegate and every member, for the most wonderful cooperation that has been given to the officers and myself during this past year. This has been a year of my life that I will always cherish. I can only say again that I cannot tell you how much I appreciated the honor. I thank you.

The House of Delegates stands adjourned.

The meeting adjourned at ten-thirty o'clock.

STATE DEPARTMENT OF HEALTH

(Continued from page 350)

perinephritic or pelvic abscess on the right side. Death occurred in a Des Moines hospital. Post-mortem examination was not performed. Infection in the fatal case of smallpox was preceded by illness among four children in the same home, two of whom were of school age. None of the members of this family, who suffered an attack of smallpox, had ever been successfully vaccinated. The cases were reported to the local board of health and State Department of Health by E. E. Shaw, M.D., of Indianola.

Morbidity Reports for Five Year Period: As was pointed out in the February, 1935, number of the JOURNAL reported cases of smallpox have decreased greatly in number in recent years. This is evident from the fact that in 1930, notified cases of this disease numbered 3,044, whereas in 1934 the total of such cases was 166. The following

table indicates the distribution of reported cases of smallpox for the period beginning January 1, 1930, and ending June 30, 1935. Figures in the first column represent a five year average for the period 1930-1934. Reported cases for 1934 and the first six months of 1935 appear in the table and are indicated in the accompanying figure which presents the same data in graphic form.

REPORTS OF SMALLPOX CASES IN IOWA

Months	1930-1934 5-year average	1934	1935
January .....	230	25	6
February .....	174	22	12
March .....	212	37	9
April .....	211	26	22
May .....	190	23	21
June .....	129	3	29
July .....	66	8	—
August .....	19	1	—
September .....	13	2	—
October .....	28	6	—
November .....	87	5	—
December .....	106	8	—

PREVALENCE OF DISEASE

	May 1935	April 1935	May 1934	Most Cases Reported From
Diphtheria .....	40	45	25	Black Hawk-Poweshiek
Scarlet Fever .....	355	370	235	Dubuque-Black Hawk
Typhoid Fever .....	6	3	4	Polk
Smallpox .....	21	22	23	Warren-Polk
Measles .....	1,688	3,393	1,432	(For State)
Whooping Cough .....	60	78	184	Woodbury
Cerebrospinal Meningitis .....	12	16	6	Woodbury
Chickenpox .....	347	254	290	Boone-Black Hawk
Mumps .....	1,050	1,381	280	Polk-Woodbury
Poliomyelitis .....	3	0	3	Cherokee
Tuberculosis .....	77	33	41	(For State)
Undulant Fever .....	13	6	7	(For State)
Syphilis .....	143	116	70	(For State)
Gonorrhea .....	152	148	133	(For State)

## SPEAKERS BUREAU ACTIVITIES

### POSTGRADUATE COURSES

The Speakers Bureau has completed the six post-graduate courses which were given this spring, and it seems fitting to give a summary of the work at this time. Courses were held in six centers:

Council Bluffs.  
Leon.  
Independence.  
Hampton.  
Emmetsburg.  
Decorah.

In all, two hundred and seventy-five men were enrolled, or an average of forty-six to a course.

One of these was a course in general therapeutics; three were laboratory courses showing laboratory technic and evaluation; and two were of a clinic type, one in gastro-intestinal diseases, and one in genito-urinary diseases.

Comments received on the courses have been very favorable. Further proof of the value of such post-graduate instruction is to be found in the fact that the Speakers Bureau Committee has received requests for eight courses to be given this fall. The committee is working on plans for these at present, and as soon as they are completed, every doctor in the state will be notified of a course to be held in his vicinity.

### RADIO BROADCASTS

WOI—Wednesdays at 7:15 p. m.

WSUI—Mondays at 8:00 p. m.

July 3—First Aid in Accidents,	D. N. Gibson, M.D.
July 10—Cancer of the Stomach,	T. J. Irish, M.D.
July 17—Typhoid Fever,	H. I. Down, M.D.
July 24—Insects and Man,	M. E. Barnes, M.D.
July 31—Holiday Traffic Dangers,	H. E. Ransom, M.D.
Aug. 7—The Vacation and Health,	Erwin Schenk, M.D.

## WOMAN'S AUXILIARY NEWS

The annual meeting of the Woman's Auxiliary to the American Medical Association, held recently in Atlantic City, was most interesting, enlightening and entertaining. The registration was the largest on record, there being 1,584 members and guests present.

New auxiliaries had been organized in two states during the past year, namely, New York and North Dakota. Iowa was complimented on her report, being the first to report uniformity in county fiscal year ending. Pottawattamie County's poor project was given special attention. Outstanding in public relations were Georgia, Florida, and the District of Columbia. Wisconsin placed over 2,000 *Hygiea* subscriptions. Florida circulated 50,000 health pamphlets, and presented radio talks on the importance of servant health certificates, etc. Every department reported good work. A number of state presidents, including Iowa's, recommended a definite national program. This will be referred to an advisory committee of the American Medical Association, and may possibly be considered for the year 1936-1937. The presence of the Canadian women added to the festivity of the meeting. Dr. Dafoe of quintuplet fame was present at an Auxiliary luncheon, and held an open discussion which proved most entertaining.

The successful administration of the press and publicity division won for Mrs. Robert Fitzgerald of Wisconsin, the office of president-elect for the ensuing year. Iowa was signally honored when Mrs. James A. Downing of Des Moines was named as a director of the governing board. Mrs. Robert Herbert, of Nashville, Tennessee, the incoming president, is a charming young southern woman, and promises an interesting year. Other officers include: Mrs. C. C. Tomlinson of Nebraska, recording secretary; Mrs. Elmer Whitney of Michigan, second vice president; Mrs. S. Cole of Illinois, chairman of supplies.

National chairmen were unanimous in recommending the importance of close cooperation by frequent correspondence, exchange of opinions, etc., between state and national chairmen. These names and addresses will be printed in an early issue of the *Journal of the American Medical Association*.

Mrs. M. C. Hennessy.



## SOCIETY PROCEEDINGS

### Cerro Gordo County

The regular meeting of the Cerro Gordo County Medical Society was held Friday, June 21, at the Hotel Hanford in Mason City. The scientific portion of the program consisted of a paper by N. G. Alcock, M.D., of Iowa City, on Transurethral Prostatectomy.

At the business meeting, the society adopted the plan for a county tuberculosis association to carry on a program of tuberculosis eradication, locally. Dr. E. L. Wurtzer of Clear Lake was appointed to the program committee; Dr. C. E. Dakin was appointed to represent the society on the finance committee; and Dr. T. E. Davidson was appointed to the publicity committee.

H. W. Morgan, M.D., Secretary.

### Davis County

Two Ottumwa physicians furnished the scientific program for members of the Davis County Medical Society when they met in Bloomfield, Tuesday, June 25. Glenn C. Blome, M.D., spoke on Fractures; and H. H. Webb, M.D., discussed the subject from a roentgenologic viewpoint.

### Dickinson-Emmet Society

The Dickinson-Emmet Medical Societies held a joint meeting, Thursday, June 27, at the Hotel Antlers in Spirit Lake. E. D. Plass, M.D., of Iowa City addressed the group on:

1. The Use of the Elliott Machine.
2. The Diagnosis and Treatment of Leukorrhea.

The doctors from surrounding counties were invited, and many attended.

Ruth F. Wolcott, M.D., Secretary.

### Johnson County

At the regular meeting of the Johnson County Medical Society, held in Iowa City, Wednesday, June 5, S. S. Steinberg, M.D., spoke on the Beneficial Effect of High Sodium Chloride Intake in the Treatment of Irradiation Sickness, and Ernst Freund, M.D., addressed the society on Hypertrophic Arthritis of the Hip.

Horace M. Korn, M.D., Secretary.

### Lee County

Seventy-five members of the Lee County Medical Society attended the afternoon and evening meeting of the organization, held in Keokuk, Wednesday, June 20, at the Country Club. The two afternoon speakers were: Michael L. Mason, M.D., Chicago, assistant professor of surgery, Northwestern University College of Medicine, who spoke on Infections

of the Hand; and J. Rudolph Yung, Terre Haute, president-elect of the American Association for the Study of Goiter, who presented an illustrated lecture on the Diagnosis and Treatment of Toxic Diffuse Goiter. Dinner was served at 6:15, after which the following two papers were read: Cancer of the Breast, Allan Graham, M.D., Cleveland Clinic, Cleveland; and Behaviour Problems in Children, Bert L. Beverly, M.D., of Chicago.

### Mills County

The Mills County Medical Society met in Glenwood Thursday, June 6, at the Institution for Feeble-minded Children. J. M. Cowen, M.D., and E. C. Margaret, M.D., both of Glenwood, were voted into membership in the society. Dr. D. W. Harman, president, also of Glenwood, reported on the state medical meeting held recently in Davenport.

J. M. Donelan, M.D., Secretary.

### Washington County

The Washington County Medical Society held its June meeting, Tuesday, the twenty-fifth, following a six-thirty dinner at the Congress Hotel. The scientific program consisted of an illustrated lecture on Gonorrhea in the Female, presented by W. F. Mengert, M.D., of Iowa City.

W. S. Kyle, M.D., Secretary.

### Twin Lakes District Medical Society

The Thirteenth Annual Assembly of the Twin Lakes District Medical Society was held Tuesday, June 25, in Rockwell City. Clinics were presented by L. A. Calkins, M.D., of Kansas City; H. L. Kretschmer, M.D., of Chicago; Karl A. Meyer, M.D., of Chicago; S. Marx White, M.D., of Minneapolis; and F. A. Willius, M.D., of Rochester, Minnesota. Morris Fishbein, M.D., editor of the *Journal of the American Medical Association*, addressed the group on Our Changing Times.

### INTERESTING NEWS IN BRIEF

The measles epidemic of this year broke records for the past twenty-one years.

Statisticians have concluded recently that the population in Europe has quadrupled during the past two hundred years.

A modern triumph of public health administration is revealed in a recent report which indicates that New York state has been completely free from small-pox for over two years.

A new respiratory infection resembling the influenza of 1918 and 1919, except for its afebrile course, has appeared in epidemic form, particularly on the west coast this year.

Investigations at Yale University indicate that the normal requirement for Vitamin B is greater in men than in women, which accounts for the increased number of cases of beriberi in young adult males.

Said to produce sleep in one minute and a half, and to cause complete relaxation of the abdominal muscles without paralysis to the diaphragm, a new anesthetic called divinyl ether, an intermediary substance between ethyl ether and ethylene, has been manufactured in limited quantities, and has been subjected to human trial during the past two years.

#### PERSONAL MENTION

Dr. E. B. Grossmann, who was graduated from the University of Iowa College of Medicine in 1934, and has just completed his internship at Broadlawns General Hospital in Des Moines, plans to locate in Anita.

Dr. C. M. Coldren, after practicing in Spencer for forty-five years, has left that vicinity, to make his home with a daughter in Omaha.

Dr. L. C. Kuhn of Decorah spoke before the local Child Study Club, Tuesday, June 10, on "Choosing the Proper Nursemaid for Your Child."

Dr. Charles E. Irwin of Cedar Rapids, Linn County coroner, has been named chief surgeon of the Iowa State Soldiers Home at Marshalltown. He assumed his new duties July 1.

#### NEW DEAN, UNIVERSITY OF IOWA, COLLEGE OF MEDICINE

Dr. Ewen M. MacEwen became dean of the College of Medicine at the State University of Iowa, July first of this year. The position had been vacant since 1932, when Dr. Henry S. Houghton resigned to join the medical faculty at the University of Chicago. Since that time the College of Medicine has been administered by an interim committee composed of Drs. John T. McClintock, chairman, Howard L. Beye, and E. D. Plass.

The new dean was graduated from the college in 1912 and has been connected with the university in

various capacities continuously from that time. For three years he was demonstrator in the department of anatomy, histology, embryology, and neuro-anatomy. In 1920 he was appointed professor, and since 1921, he has been head of the department. He will continue as head for the present.

Dr. MacEwen is a member of Sigma Xi, honorary scientific fraternity; Alpha Omega Alpha, honorary medical fraternity; and Nu Sigma Nu, medical fraternity.

#### DEATH NOTICES

Engle, Perry, of Newton, aged ninety-two, died June 29, after an illness extending over a period of years. He was graduated in 1871 from the University of Michigan Medical School, Ann Arbor, and at the time of his death was a life member of the Jasper County and Iowa State Medical Societies.

Findley, Park A., of Des Moines, aged sixty, died suddenly June 13, as the result of a heart attack. He was graduated in 1895 from Drake University College of Medicine, and at the time of his death was a member of the Polk County Medical Society.

Payne, Harry Clemmens, of Pella, aged sixty-four, died June 23, following an illness of several weeks. He was graduated in 1897 from Keokuk Medical College, and at the time of his death was a member of the Marion County Medical Society.

Spooner, Alexander L., of Luverne, aged seventy-four, died June 1, after a short illness of pneumonia. He was graduated in 1892 from Keokuk Medical College and at the time of his death was a member of the Kossuth County Medical Society.

Townsend, Daniel John, of Lohrville, aged seventy-nine, died suddenly June 3, as the result of a heart attack. He was graduated in 1887 from Drake University College of Medicine, and at the time of his death was a life member of the Calhoun County and Iowa State Medical Societies.

#### MEMBERSHIP

The following additions are made to the membership report which was published in the June issue of the JOURNAL. The Poweshiek County Medical Society is among those counties in which every eligible physician in the county is a member of his medical society. In the following counties the resident 1934 membership has joined one hundred per cent for 1935 and in many cases new or delinquent members have been added to the 1935 membership list: Adair, Appanoose, Black Hawk, Bremer, Buena Vista, Grundy, Marion.



# HISTORY OF MEDICINE IN IOWA

*Edited by the Historical Committee*

DR. FRANK M. FULLER, Keokuk

DR. JOHN T. McCLINTOCK, Iowa City

DR. PAUL W. VAN METRE, Rockwell City

DR. TOM B. THROCKMORTON, Des Moines

DR. WALTER L. BIERRING, Des Moines

DR. WILLIAM JEPSON, Sioux City

## A History of Medicine in Jefferson County, Iowa

JAMES FREDERIC CLARKE, M.D., F.A.C.S., Fairfield

(Continued from last month)

For the first fourteen months of this hospital's existence it had 296 patients. There were 26 births. The total days of patients' treatment were 4,300. There were 181 surgical operations. During the twelve months of 1913 the income paid 79.70 per cent of the expenses for that year, which were \$9,140.00; so that in the first year, with the people still to be educated to the use of the hospital, the excess of the expenditure over the income was only \$1,170.00. This was paid by county tax as provided in the hospital law. In the opinion of the writer, after these first fourteen months, the citizens of the county were so pleased with the hospital that they would not have given it up under any considerations. There is no doubt that many lives have been saved by emergency operations through the years of the existence of this hospital. On the other hand the hospital furnished opportunities for unskilled performances of unnecessary operations. It has been impossible to prevent this abuse in an institution supported by public taxation and without a controlled staff. Attempts to have the surgical work in this hospital checked by the pathologist of the State University have as yet been ineffectual. There is no doubt in the minds of the best thinkers that rural hospitals are essential to each community. A great desideratum is, however, that some system may be devised to check and control the surgery of unskilled and commercially minded operators who prey on the people.

Not until July 1, 1928, did this hospital have a technician and blood counts became common. The first technician regularly employed in the hospital was Miss Minerva Peters. The first regular staff meetings of the hospital doctors began January 12, 1931, and continued to September 26, 1932. These

were again revived in October, 1934, and are to be held monthly if present plans prevail.

In all records before, during and following the Civil War in Jefferson County there was little operative surgery. In many of the operations of that period there was "laudable pus." Though Lister taught antisepsis in England in 1867 it was more than twenty years before his principles were used in common practice in Jefferson County, Iowa. It was usual in 1890 and for some years later to send surgical patients to cities, or have a city surgeon brought to Jefferson County for the operations. Dr. Calvin Snook was the leading local surgeon at that time and did excellent, careful work. Excepting Dr. J. V. Bean, few of the other doctors did other than minor surgery.

The taking of blood pressure as a routine measure in practice was not common in Fairfield until 1911. On August 17, 1911, Dr. William S. Sadler, of Chicago, lectured at the Fairfield Chautauqua and took the blood pressure of several from the audience. This awakened the public interest in the subject and the Jefferson County doctors were compelled to equip themselves with machines for making studies in blood pressure. In the following years this became a routine procedure.

### ACCESSORIES TO PRACTICE

The automobile is now an essential item to the doctor. In the beginning of our century many doctors came to Jefferson County in wagons drawn by oxen. In the early practice they rode horseback with saddle bags across the saddle. We illustrate the saddle bags carried by Dr. P. N. Woods in 1864 and after. The saddle bags contained bottles, almost all of which were filled with liquid

medicines. There were no tablets and capsules as we have today. After roads were made the doctor used a sulky—a two-wheeled buggy, drawn by one or two horses. Several of the doctors thought much of their horses. Dr. Huey had a driver and a fine team. He was probably the most patrician physician who ever lived in Jefferson County. Accustomed to servants he never himself did any manual labor. Judge Leggett said, "Dr. Huey was the most cultured gentleman that I ever met." Dr. Stever, a lover of horses, drove a high stepping team. Dr. Fordyce's faithful mare, that had served him well for many years, was so famed that she had a long death notice in the papers when she died.

Finally came the automobile and Dr. J. Fred Clarke had the first automobile brought into Jefferson County in 1903. Dr. Clarke then began the education of the horses of the county to a tolerance for these new machines. He had to stop beside the road and help lead by nearly all the teams he met. The language used by the farmers as they passed on their way will not be recorded here. Many a "run-away" resulted in spite of the care exercised and it was probably "bad business" to introduce the new invention; but Mr. Ford came to the rescue, everybody bought automobiles and roads were built; but not until 1927.

#### THE WORLD WAR

The coming of the World War disturbed the doctors of Jefferson County as it did all people in the country and in the world. General Jefferson R. Kean, of the Army Medical Corps, was assigned to organize Red Cross hospital units for the United States Army. Dr. J. Fred Clarke had served under General Kean in the war with Spain and Dr. Clarke was asked to organize a medical unit for this war. The outcome was the organization of Hospital Unit R at Fairfield consisting of twelve medical officers, twenty-five nurses and fifty enlisted men. Major J. Fred Clarke, Captain L. D. James<sup>93</sup> and Captain Roy McGuire<sup>116</sup> were the doctors from Fairfield in Unit R. These were joined by nine other doctors from nearby towns. On the return from the services, Dr. I. N. Crow<sup>40</sup> of Unit R located in Fairfield. Dr. S. K. Davis<sup>45</sup> of Libertyville was desired in the unit but he failed to pass the physical examination in Des Moines and was refused a commission, much to the regret of the commander and his associates. Dr. J. S. Gaumer<sup>66</sup> had served in the Medical Corps on the Mexican Border before the World War, was retired because of physical disability, and because of this disability was refused a commission in Unit R. Hospital Unit R served sixteen months in France and the doctors from Jefferson County made an excellent though not notable record. Each was promoted. Drs. James and McGuire returned

as majors, and Dr. Clarke as a lieutenant colonel. Dr. Crow became a captain in France and was the only one to receive a wound medal. Other Jefferson County doctors in the army during the World War were Dr. E. G. Myrick<sup>134</sup>, lieutenant, served in Kansas, and Dr. J. H. Baldridge<sup>6</sup>, lieutenant, with service in the Philippine Islands. Dr. W. Fordyce gave a valuable service as a recruiting officer on the draft board. His sterling honesty adapted him well for this difficult position. Dr. James K. Stepp<sup>176</sup>, who had been a hospital steward in the regular army from 1912 to 1915, rendered valuable services in examining the privates for Unit R enlistment. All Unit R men and women were volunteers. Dr. F. F. Winsell<sup>201</sup>, afterward in Fairfield, was a commissioned captain in the Army Medical Corps and served in this country.

Since the World War the practice of medicine has continued to advance—discoveries like insulin have been quickly adopted. Medicine here today is probably like that of every community in the United States. The public prints keep the intelligent people well posted, and doctors must give the most advanced service.

#### THE CARE OF THE POOR IN JEFFERSON COUNTY

Probably no group of men does more for the people, without pay, than the doctors of medicine. As noted before, Dr. Shaffer in 1854 gave Mrs. D. "a clear receipt" for a bill of \$106.75 on the payment of \$20.00, and in 1864 Dr. Dial "forgave" the entire bill of a widow whose husband had died in the "army of his country and of God." These are typical of incidents in every doctor's life.

Dr. William Fordyce, when practicing at Glasgow, had many patients in the Swedish settlement a few miles northeast of his home. Many of these Swedish people were very poor and having no money to pay the doctor they did not call him until the patient was extremely ill or even dead. Dr. Fordyce urged these Swedes to call him earlier, before the illness became so serious, telling them he would wait for his pay. He finally educated them in this plan and he records that he never lost one dollar on these accounts. We believe that many of the Jefferson County doctors can testify to this honesty of the Swedish people. Dr. Fordyce related an interesting experience of that time: One winter when the roads were impassable and one of these families had no money, a child died. Because of the severe weather and his inability to pay an undertaker the father wrapped the child's body in heavy coverings and tied it high in a tree until a favorable time for burial. This instance of a return to an old Indian custom is unique, insofar as we know, among the white people of Jefferson County.

(To be continued next month)



# THE JOURNAL BOOK SHELF

## BOOKS RECEIVED

**ANNUAL REPORT OF THE SURGEON GENERAL OF THE PUBLIC HEALTH SERVICE OF THE UNITED STATES—**For the fiscal year, 1934. United States Government Printing Office, Washington, 1934. For sale by the Superintendent of Documents, Washington, D. C. Price, seventy-five cents.

**THE AUTONOMIC NERVOUS SYSTEM—**By Albert Kuntz, Ph.D., M.D., professor of micro-anatomy, St. Louis University School of Medicine. Second edition, greatly enlarged and thoroughly revised. Octavo of 697 pages, illustrated with 73 engravings. Lea & Febiger, Philadelphia, 1934. Price, \$7.50.

**BODY MECHANICS IN THE STUDY AND TREATMENT OF DISEASE—**By Joel E. Goldthwaite, M.D., Lloyd T. Brown, M.D., Loring T. Swaim, M.D., and John G. Kuhns, M.D. J. B. Lippincott Company, Philadelphia and London, 1935. Price, \$4.00.

**HOW TO PRACTICE MEDICINE—**By Henry W. Kemp, M.D., New York. Paul B. Hoeber, New York, 1935. Price, \$2.50.

**INTERNATIONAL CLINICS—**Volume I, Forty-fifth Series. Edited by Louis Hamman, M.D., visiting physician, Johns Hopkins Hospital. J. B. Lippincott Company, Philadelphia and London, 1935. Price, \$3.00.

**MORTALITY AMONG PATIENTS WITH MENTAL DISEASE—**By Benjamin Malzberg, Ph.D., New York State Department of Mental Hygiene, Albany, New York. State Hospitals Press, Utica, New York, 1934.

**OBSERVATIONS OF A GENERAL PRACTITIONER—**By William N. Macartney, M.D. Richard G. Badger, Publisher, The Gorham Press, 100 Charles Street, Boston, Massachusetts.

**PERIODIC FERTILITY AND STERILITY IN WOMAN—**A Natural Method of Birth Control—By Professor Herman Knaus, head of the clinic for gynecology and obstetrics, of the German University of Prague. With 64 illustrations and 12 tables. Wilhelm Maudrich, Publisher, Vienna, 1934. Price, \$6.50.

**REPORT ON SEVENTH INTERNATIONAL CONGRESS OF MILITARY MEDICINE AND PHARMACY—**Held in Madrid, Spain, May-June, 1933. By Captain William Seaman Bainbridge, M.C.-F., U.S.N.R. George Banta Publishing Company, Menasha, Wisconsin, 1934.

**SURGICAL APPLIED ANATOMY—**By Sir Frederick Treves, Bart. Ninth edition, revised by C. C. Choyce, M.D., professor of surgery, University of London. Illustrated with 174 figures, including 66 in color. Lea & Febiger, Philadelphia, 1934. Price, \$4.00.

**THE YEAR BOOK OF GENERAL MEDICINE, 1934—**Edited by George F. Dick, M.D., Lawrason Brown, M.D., George R. Minot, M.D., William B. Castle, M.D., William D. Stroud, M.D., and George B. Eusterman, M.D. The Year Book Publishers, Inc., Chicago, 1934. Price, \$3.00.

**THE YEAR BOOK OF GENERAL SURGERY—**Edited by Evarts A. Graham, M.D., professor of surgery, Washington University School of Medicine. The Year Book Publishers, Inc., Chicago, 1934. Price, \$3.00.

## BOOK REVIEWS

### ILLUSTRATIVE ELECTROCARDIOGRAPHY

By the late Joseph H. Bainton, M.D., formerly attending physician and chief of the Cardiac Clinic, Morrisania City Hospital, New York; and Julius Burstein, M.D., associate electrocardiographer, Morrisania City Hospital, New York. D. Appleton-Century Company, New York and London, 1935. Price, \$5.00.

This monograph on electrocardiography presents one hundred and fifty-five carefully selected electrocardiograms chosen from more than seventy-five hundred tracings taken during a four year period (1930 to 1934) at the Morrisania City Hospital, New York City. The text material is limited to a condensed consideration of the particular principle in cardiac diagnosis exemplified by the chart which is reproduced on the same page with this explanation. The subject matter has been arranged in definite sequence so that the reader with an elementary knowledge of electrocardiography can readily follow the text. The presentation and discussion of coronary thrombosis is particularly interesting, and in this one condition the author has attempted a correlation of the graphic records presented with the clinical and pathologic findings producing these changes. Another noteworthy section demonstrates the electrocardiographic changes which take place during acute infection, such as pneumonia, typhoid, and rheumatism. The concluding chapters of the book present

more unusual conditions and those conditions in which indefinite or complicated tracings are obtained. The increasing incidence of heart disease makes a thorough knowledge of electrocardiography an essential item in treating the condition satisfactorily, and while this volume does not present the technic of electrocardiography, it will be found of great value, particularly to the advanced student of this subject.

### SURGICAL APPLIED ANATOMY

By Frederick Treves, Bart. Ninth Edition, revised by C. C. Choyce, M.D., professor of surgery, University of London. Illustrated with 174 figures, including 66 in color. Lea & Febiger, Philadelphia, 1934. Price, \$4.00.

This is a standard textbook that has been universally used for the past fifty years, and has now gone through nine editions. It is well written, the illustrations are good, and to the point.

The book deals essentially with surgical anatomy, but contains much material of clinical value and points out many surgical dangers and pitfalls. It covers the general surgical anatomy of the head, neck, thorax, abdomen, extremities and spine. The volume is more abridged and condensed than the usual American textbook. In spite of this conciseness, it is a very readable book and will no doubt continue its popularity as a text for students and practicing surgeons.

D. M. B.

## INTERNATIONAL CLINICS

Volume I, Forty-fifth Series. Edited by Louis Hamman, M.D., Johns Hopkins Hospital. J. B. Lippincott Company, Philadelphia and London, 1935. Price, \$3.00.

The recent interest manifested in the newer treatments of anemia, particularly by liver and liver extracts, influences the reviewer in placing the contribution by Dr. Russell L. Haden in this issue of the International Clinics foremost in his survey of this volume. His clinic is entitled "The Red Blood Cell of Man." It discusses the clinical aspects of this subject and brings the discussion entirely up to date, incorporating the newer studies which have been completed during the past few years on the regeneration of blood as influenced under modern treatment. Deserving of special mention are also the clinics of Drs. Wilder and Pollack of Rochester, Minnesota, on "Ketosis and the Ketogenic Diet," and the paper by Dr. Verne R. Mason and Dr. Lewis Gunther, summarizing our present knowledge concerning calcium and calcium therapy. Seventeen clinics are reported in this volume.

peculiar to women, a detailed description of the reproductive apparatus, the cause and significance of menstruation, and the glands which determine female characteristics and functions. In later chapters he discusses the menopause and the more common disorders of menstruation. In one chapter he expresses his views concerning the so-called natural method of prevention, the safe period. His concluding chapter is entitled "A little about the sex life of women."

The book is written in that clear, forceful, and accurate style so characteristic of this author. The scope of the work is not as extended as in some works in this field particularly regarding the sex life and functions, but the author clearly states his position as follows: "This book is written by a rather old-fashioned fellow who still thinks that the sex life of each married couple is a very individual problem and that a popular book of this sort is not exactly the place for an intimate discussion of many of the factors making for the success or failure of such sex unions." The book has been designed particularly for the laity, and by every standard is judged to be a safe book to place in the hands of female patients.

## THE YEAR BOOK OF GENERAL SURGERY

Edited by Evarts A. Graham, M.D., professor of surgery, Washington University School of Medicine. The Year Book Publishers, Inc., Chicago, 1934. Price, \$3.00.

This volume gives a bird's-eye view of the advances in surgery during 1934. All branches of the subject are covered. Anesthesia has attracted much attention during the past year, especially spinal and epivan. Wound infection in clean cases is stressed and much importance is attached to the danger of contamination due to sore throats in any of the operating room force. Electrosurgery has been much discussed, as well as the treatment of burns. There has been a trend toward less drainage in appendicitis cases. Thoracic surgery is increasing from year to year with new developments and technic. F. W. F.

## ECONOMIC PROBLEMS OF MEDICINE

By A. C. Christie, M.D., professor of clinical radiology, Georgetown University Medical School. The Macmillan Company, New York, 1935. Price, \$2.00.

This book has been "written from the viewpoint of a private practitioner of medicine," although the author is a specialist and a former member of the Committee on the Costs of Medical Care. Dr. Christie introduces the volume with a chapter on medical ethics in its relation to medical economics and through successive chapters deals with the various economic aspects of medical education, of private practice and group practice, the relationship of the physician in the hospital, the place of the physician in medical organization, and his responsibilities in his community, finally discussing medical care under the workman's compensation law and various proposed forms of health insurance. Dr. Christie was one of the signers of the majority report of the Committee on the Costs of Medical Care, and his viewpoint as expressed in this work, reflects the viewpoint of the majority report. This volume, while lacking the factual data given in larger and more comprehensive discussions on the subject, nevertheless covers the entire range of medical economics insofar as it directly bears upon the present trend in medical practice and is, therefore, well suited to the needs of the average physician. The author's survey of the several distinctive plans now on trial in various sections of this country and his analyses of proposed but yet untried schemes, brings the subject entirely up to date and places his reader in a position to appreciate fully the current discussion of these problems.

## THE WOMAN ASKS THE DOCTOR

By Emil Novak, M. D., associate in gynecology, Johns Hopkins University Medical School. The Williams and Wilkins Company, Baltimore, 1935. Price, \$1.50.

The author of this volume has long maintained his position as an outstanding gynecologist, and because of this position and his wide experience in dealing with female patients we feel that Dr. Novak is eminently fitted for the authorship of this simple exposition of those special problems so vitally important and vitally interesting to women. He introduces his book with a discussion of the anatomy and physiology



# The JOURNAL

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### POSTOPERATIVE PULMONARY COMPLICATIONS\*†

WILLIAM S. MIDDLETON, M.D., Madison, Wis.

In the last analysis surgery aims to restore disturbed anatomic and physiologic relations by mechanical means. Short of this ideal the surgeon may improve the functional efficiency of his patient, eradicate disease or so alter the situation as to swing the resistance-disease balance to the favor of his subject. In the latter relations he may at times be forced to sacrifice a certain measure of structural or even functional integrity in the greater interest of the host as a whole. Never may he forget the Hippocratic injunction, "If you can do no good, at least do no harm."

Aside from the local problems involved in every surgical procedure, there arises among other considerations the serious question of postoperative pulmonary complications. In many obviously preventable conditions of this order the surgeon has had no choice. If the operation be one of necessity, he must undertake his task in the face of apparent hazards; but certain rules of action may be formulated in the interest of both the patient and the surgeon. A review of the situation seems amply justified by the frequency and the gravity of such complications.

For the purpose of discussion these postoperative pulmonary complications may be grouped as follows:

#### I. Circulatory

- Pulmonary infarction
- Thrombosis
- Embolism
- Pulmonary edema

#### II. Infectious

- Bronchitis
- Bronchopneumonia
- Abscess
- Gangrene

#### III. Mechanical

- Massive collapse

While this classification does not exhaust the postoperative pulmonary complications, it will afford an adequate working chart.

The lungs have a double blood supply. The bronchial arterial system is nutrient and the pulmonary system is functional. Normally the pulmonary artery carries a pressure of one-sixth to one-fourth that of the systemic arteries. Karsner and his associates<sup>1</sup> established the fact that functional anastomoses exist between the two systems only when the pressure in one is reduced virtually to zero. They proved that infarction could be produced experimentally only when the pressure in the bronchial artery was sharply reduced and the pulmonary vein occluded at the time of blocking of the pulmonary artery.

Three circumstances favor the formation of a thrombus in any vessel, viz., changes in the blood, in the blood flow or in the vessel wall. Combinations of these conditions are not uncommon in the pulmonary artery and the altered circulatory status incident to general anesthesia and surgery may even further predispose to this complication.

The situation is different in the case of pulmonary embolism. The detachment of bits of thrombi, vegetations or neoplastic tissue, the entrance of air or fat into the systemic veins draining to the right heart and thence to the lung may eventuate in pulmonary embolism. To the first conditions no objection will be raised. Air embolism is a real entity notwithstanding the experimental evidence to the contrary. Fat embolism may attend manipulations of the long bones with or without open incision. By all means the most common source of emboli is remote thrombosis in the systemic veins. The pelvic and hemorrhoidal veins are especially likely to be the sites of thrombosis from which emboli may be thrown into the venous stream returning to the right heart and the lung; but any venous thrombosis in channels having this route of drainage will carry the same serious potentiality.

The clinical picture of pulmonary infarction differs in certain essential details dependent upon

\*From the Department of Medicine, University of Wisconsin.  
†Presented before the Eighty-fourth Annual Session, Iowa State Medical Society, Davenport, May 8, 9, 10, 1935.

its pathogenesis. As might be anticipated pulmonary thrombosis develops rather insidiously, frequently without a sharply defined onset. On the other hand, embolism of a sufficient degree to induce infarction is announced by a deep-seated pain in the chest that may approach excruciating proportions. Coincidentally there occurs a rise in the pulse rate with a fall in the blood pressure. The mental anxiety is reflected in the facial expression. The skin becomes leaky and clammy. Cyanosis may give way to a leaden pallor. Usually there is a cough that early may be productive of bright red blood. Later the color of the expectorated blood changes to a dark red. Dark clotted blood may be expectorated for days after the accident. The initial pain gives place to a pleuritic type in the period of reactive pleurisy. With the reactive phase may come a mild to moderate fever, but a hectic febrile course bespeaks a septic embolic process and abscess formation may be predicted. Jaundice is a singularly constant sequel of pulmonary infarction and usually appears after eighteen to twenty-four hours.

The physical findings of this condition as related to the chest include a limitation of the respiratory excursion on the affected side. Dyspnea may or may not be apparent. As a rule the vibratory phenomena are decreased over the area of infarction; but occasionally tactile fremitus and vocal resonance may be increased. If the area be of sufficient size, impairment of resonance to dullness may be elicited. Ordinarily the breath sounds are definitely suppressed; but exceptionally a bronchial quality is imparted to them. Fine crackling and moist râles are audible over and about the infarcted zone and usually a friction rub becomes apparent within the first twenty-four to thirty-six hours. A pleural effusion may ultimately form to obscure the above signs and give its own characteristic findings. A moderate polymorphonuclear leukocytosis prevails. The roentgenogram may reveal the characteristic wedge-shaped density with its base toward the periphery; and, indeed, when the infarct is directed toward the diaphragm or the interlobar septa, the roentgenogram may occasionally afford the final diagnostic criterion.

The prognosis of pulmonary infarction varies widely. Frequently sudden death ensues in the primary shock of pulmonary embolism after a short period of gasping respiration and unconsciousness. Thrombosis of the pulmonary artery reflects general circulatory depression in many instances and may carry with it an increased threat. With improved diagnosis the survival of patients with pulmonary infarction has come to be recognized quite frequently.

The proper assessment of surgical risks would

exclude many patients with borderline myocardial efficiency from surgery of election and thus reduce the chance of pulmonary thrombosis. An appreciation of the peculiar threat of certain vascular areas and states in the liberation of emboli would limit the danger of pulmonary embolism. The manipulation of thrombosed pelvic, hemorrhoidal or other veins must be sharply interdicted. Pulmonary embolectomy may be attempted in appropriate cases. Morphine is a valuable drug in pulmonary infarction. Oxygen inhalations by controlling the anoxemia will prove very beneficial. Circulatory support may be afforded as required.

Edema of the lungs is merely the pulmonary manifestation of a circulatory imbalance. Welch's theory<sup>2</sup> of a disparity in the ventricular force of the left heart as compared with the right side is generally accepted. This explanation presupposes an incapacity of the left ventricle to discharge the blood delivered to it from the right heart through the pulmonary circuit. The resultant pulmonary edema may be paroxysmal and recurrent. Dyspnea is commonly the first symptom of this episode and it is usually attended by marked apprehension. A cough ensues. At first it is harsh and unproductive, but it soon becomes productive of frothy, clear or blood-tinged sputum. The sense of respiratory oppression is marked. The pulse is rapid and the blood pressure usually falls. A ghastly pallor or a dusky cyanosis may be interchangeable in the same subject. Basal crackling râles and suppressed breath sounds may be the only physical signs in the lungs. Occasionally the percussion note may be impaired at the bases.

Obviously the prevention of this circumstance as a postoperative complication involves the avoidance of surgery of election in subjects who have experienced prior attacks of pulmonary edema. Further, the protection of the hypertensive and the myocardial degenerative patient from the threat of circulatory strain in surgery of necessity should be enjoined insofar as possible. Venesection is the logical treatment for pulmonary edema. Not less than 500 c. c. of blood should be removed and the time consumed in its withdrawal should not exceed fifteen minutes (preferably five minutes).<sup>3</sup> Morphine plays an important role in quieting the mental unrest and in controlling tachypnea. Obviously it must not be pressed to the point of serious respiratory depression; else it will undo its advantage. Oxygen is an invaluable aid. Circulatory support must be afforded as required. If arterial hypertension be present, vasodilators may serve a useful purpose in limiting the attack.

Inflammation of the upper respiratory tract and bronchi constitutes the greatest source of post-



operative complications. Dependent upon recognized or latent infections the influence of the anesthetic agent may serve as a direct excitant. The catarrhal reaction to the inhalation of such substances may be a factor in this direction. For the present purpose the manner of action of these drugs is not under consideration except for their obvious predisposing influence to pneumonia, especially of the patchy type. With general anesthesia the watch-dog of the tracheobronchial tree, the cough reflex, is lulled to sleep. Irritant and infectious material may be insufflated into the lung. In the case of an anesthetic agent administered by inhalation there must, as stated, enter the consideration of its independent irritating action. Spinal anesthetics assume a disproportionately important place when their level of anesthesia involves the intercostal nerves. Hypostasis plays an important part in the picture especially with advancing years. As implied before, antecedent upper respiratory infections (and infections of the mouth) serve as the spark from which an overwhelmingly majority of such processes spread, whether by aspiration, by continuity, or by favoring localized atelectasis, is beside the present discussion.

As a rule the patient who has been observed to suffer from a common cold with or without a cough, shows a marked accession of local and constitutional symptoms with the development of pneumonia, whether it be lobar or lobular. (Attention will be directed to the latter form.) The patient becomes more prostrated. The cough is at first unproductive and distressing. Then it may become productive of mucopurulent sputum with or without a rusty phase. The temperature rises to variable degrees and tends to run a more remittent course than in lobar pneumonia, although its height is rarely so high. In enfeebled subjects the temperature may not be elevated in bronchopneumonia. The respirations are disproportionately accelerated. The pulse rate is commonly elevated *pari passu* with the temperature, but at times it may rise disproportionately.

The characteristic physical signs of bronchopneumonia include an anxiety of expression and restlessness or profound prostration. Cyanosis and dyspnea are the rule. Grunting expiration and play of the alae of the nose are conspicuous in children. Not uncommonly the patchy pneumonic process is basal and bilateral. The areas may be too small to be discernible to physical examination. At other times there may be areas of impaired resonance with increased vibratory phenomena and bronchial breath sounds, interspersed with areas of similar air content with reduced vibratory phenomena and suppressed breath sounds; and

adjacent to these may be areas having a normal or hyperresonant note with exaggeration of the normal transmission of breath and voice vibrations. Showers of fine crackling and moist râles are commonly heard over the areas of congestion and consolidation. Pleuritic frictions may be anticipated. The roentgenographic appearance of bronchopneumonia is diagnostic (Fig. 1); but, of course, it affords only inferential evidence of the etiology. Polymorphonuclear leukocytosis is the rule in adequately reacting patients; but subjects with poor resistance may show no elevation of

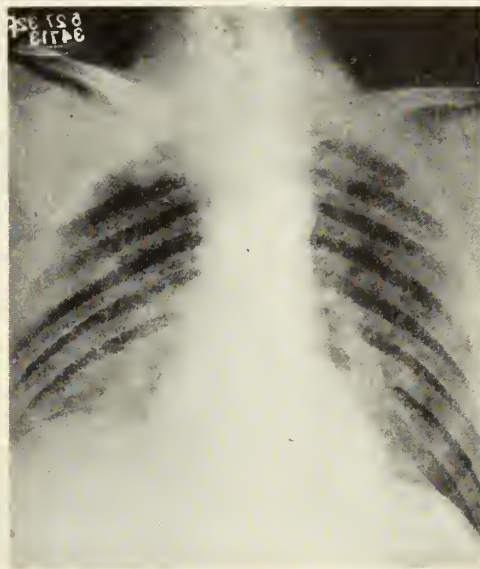


Fig. 1. Postoperative bronchopneumonia.

these blood elements. Sputum examinations may reveal the causative agent. A protracted course with a decline by lysis is the rule in favorable cases; but there is no stated duration and the outcome may remain in serious doubt for many days.

Obviously, meticulous care in the exclusion of all patients with even minor common colds from surgery of election would appreciably decrease the incidence of postoperative bronchopneumonia. The season of the year is a factor of prime consideration in the same direction. The incidence of these complications is much greater in the winter than in the summer months. The choice of the anesthetic agent and of the anesthetist must not be left to guesswork or chance. The peculiar danger of spinal anesthesia in paralyzing the intercostal muscles must not be overlooked, if the operative procedure involves structures at such levels. The depth and the duration of general anesthesia are special considerations in the pre-

disposition to this complication and their control will reduce its occurrence.

The active treatment of bronchopneumonia is supportive and symptomatic. There is no specific antiserum available as in types I and II pneumococcus lobar pneumonia. In contrast to the latter, "cold air" treatment is rarely well tolerated by the patient with bronchopneumonia. A highly nutritious, easily assimilable liquid or soft diet is in order. Its caloric value may be placed between 2,500 and 3,000. Fluids should be given to the extent of 3,000 to 4,000 c. c. and the citrus fruit juices afford highly desirable media by reason of their palatability, reaction, vitamin and carbohydrate content. The indications for symptomatic therapy are so diversified as to exceed the compass of the present dissertation, except for the mention of several moot questions. Oxygen, the natural antidote for anoxemia, is the most important drug in the treatment of bronchopneumonia. Morphine has a definite place early in the course because of its superior action on the higher centers; but later for the control of pleuritic pain it gives way to local applications, as mustard plasters, and for the control of cough, to codein. Digitalis has an established place in the treatment of myocardial failure whether in the course of an infectious disease or not. Alcohol has no specific virtue in the treatment of pneumonia and its use should be reserved for the patient habituated to the same.

Pulmonary abscess may arise postoperatively as the result of a hematogenous invasion of the lung from a remote pyogenic focus; but growing evidence favors the aspiratory route as the more common mechanism. Infectious material aspirated into the lung in the course of a surgical operation may therein cause a local reaction and abscess. This may likewise occur as a complication of postoperative bronchopneumonia. Tonsillectomy affords the most direct and serious threat on this score. The free bleeding and the expression of infected materials from the tonsils answer all of the hazards of the case. It is furthermore interesting that the danger is not entirely removed by the substitution of local for general anesthesia in these operations. Obviously a host of micro-organisms may be offending agents. More significant probably are the anaerobes arising from the mouth.

As a type the patient who has had a tonsillectomy under a general anesthetic several days before develops a headache, malaise and general aching. A dry hacking cough may first direct attention to the chest as the probably source of trouble; or there may be a deep seated thoracic pain anticipating the pleuritic pain which is inevitable if the abscess approximates the pleural surfaces. A remittent or intermittent fever pertains. Recurrent

chills occur in some patients. The pulse and the respiratory rates are elevated. The patient is extremely toxic; but there may come a sudden release from these symptoms upon the expectoration of a considerable volume of fetid dark brown or bloody sputum. The odor of this sputum and the breath at such times is characteristic, i.e. a peculiar sweet fetor. Unfortunately, the clinical course is not terminated by the primary evacuation of the abscess; but after a few hours or days, the earlier evidences of toxic absorption usually occur. Thereafter, changes in position in the presence of a patent bronchus may afford periodic egress to the pus.

The physical signs of pulmonary abscess are frequently variable, or at best, equivocal. Expansion is reduced on the affected side. If in an accessible location, impairment of resonance to dullness may be anticipated. Early the vibratory phenomena of tactile fremitus and vocal resonance



Fig. 2. Postoperative pulmonary abscess prior to evacuation.

and the transmission of breath sounds may be sharply reduced. Less commonly these signs are increased. Medium moist râles and a pleuritic friction rub may complete the physical picture at this stage. With the evacuation of the contents of the abscess, the free communication with a bronchus may grossly alter the signs. Increased tactile fremitus, cracked pot resonance, amphoric breath sounds and whispering pectoriloquy may be noted. Of incidental interest may be the occurrence of bell tympany and the water-whistle phenomenon (metallic tinkling). Downward curving of the nails and clubbing of the fingers appeared in three weeks in a patient with pulmonary abscess



in the Wisconsin General Hospital. Roentgenography is particularly valuable in sequence studies. The early localized spherical density gives way to a more or less clearly walled cavity with a reactive zone about it (Figs. 2 and 3). The cavity may show a distinctive horizontal fluid line. In the more chronic stage lipiodol may be insufflated to afford definition. The sputum may contain elastic fibers as well as myriads of bacteria.

Certain cases of lung abscess evacuate themselves and heal without surgical interference; but



Fig. 3. Postoperative pulmonary abscess after partial evacuation.

the same principles of conservatism should dictate the surgical approach to pulmonary abscess as are held in similar conditions elsewhere in the body. This aid should be sought only after the walling process is assured. Then the manner of approach and treatment is a distinctly specialized one beyond the province of this discussion. Short of surgery, repeated bronchoscopic aspirations may bring complete relief. If the fusiform bacilli and spirilla of Vincent appear in the sputa, neoarsphenamine should be given whether or not surgery is contemplated.

Gangrene of the lung is a rare complication of surgery. Primary gangrene dependent upon purely local circulatory disturbance is very unusual under any circumstance. As a rule gangrene of the lung arises from an overwhelming infection with coincident vascular interruption. The disintegration of the lung architecture may be circumscribed or diffuse. The former is the more common type and ordinarily it has its origin in pulmonary abscess. Indeed it is frequently difficult to say pathologically or clinically where one begins and the other

ends. The circumstances of its inception are precisely those of abscess of the lung. The added predisposing factors of advanced years and marked debility may be remarked. The more constant presence of Vincent's organisms in the sputa and the involved lung has supported the contention of its etiologic relationship. Practical as well as academic objections may be raised to this viewpoint, but they are outside the realm of the present consideration.

Clinically the early course of pulmonary gangrene is essentially that of abscess of the lung. The prostration and septic course are perhaps more marked. The toxemia manifests itself in tachycardia and dyspnea. The cough which is usually troublesome is characteristically productive of an extremely fetid sputum. This odor is practically pathognomonic and it permeates the entire environs. Fusiform bacilli and spirilla may be found in the sputum. Elastic fibers are constantly found in this material. The physical findings in the chest may exactly duplicate those of pulmonary abscess. Roentgenograms of the chest frequently fail of

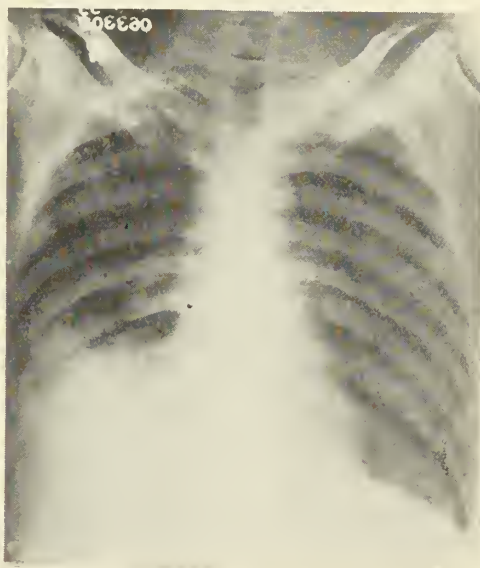


Fig. 4. Gangrenous abscess of the lung.

clear definition. Eventually, however these will show evidences of excavation with ill-defined borders. A definite wall is not expected to enclose the gangrenous area of the lung (Fig. 4). The outlook is highly unfavorable. Few patients survive this postoperative complication. Supportive measures and arsenicals, if the Vincent's organisms be present, are in order; but the general condition of the patient usually precludes radical surgery. Survival has been reported in a few patients with gangrene of the lung treated by arsenicals alone.

Atelectasis of the lung is one of the most interesting of the postoperative pulmonary complications. While its recognition is much more common nowadays, there is no reason to suspect that its incidence has increased. The designation, postoperative collapse of the lung, is not deserved since it may occur under conditions entirely removed from surgery. Its pathogenesis has been the subject of much discussion. While neurogenic factors, diaphragmatic arrest, immobility of the parietes and other details may contribute to the condition, pulmonary collapse most regularly results from obstruction of a bronchus. This mechanism explains the wide range of degrees of atelectasis from microscopic areas to massive involvement of lobe or lobes. With the occlusion of a bronchus, "drowning"<sup>4</sup> occurs distally to the point of obstruction and thereafter the air is absorbed from the affected lung beyond this point. In the massive type the characteristic displacement of the trachea, heart and other mediastinal contents to the affected side with elevation of the diaphragm reflects this circumstance. In the past too little attention was paid to the study of the bronchial tree in patients succumbing to this condition. The patient may or may not have had a respiratory infection prior to the operative procedure. Contrary to the earlier opinion inhalation anesthesia is less likely to predispose to massive collapse than spinal anesthesia.<sup>5</sup>

Although varying grades of massive collapse of the lung may occur without clinical symptoms, usually the picture is initiated within thirty-six hours after the bronchial obstruction. The inception of symptoms may be very sudden, or evidences of respiratory embarrassment may develop insidiously. In the more profound types the constitutional symptoms predominate the earlier period. The temperature rises to moderate febrile levels. Respiratory distress and cyanosis are virtually constant in patients showing any clinical evidences of the affection. Acceleration of the pulse is usually proportional. A cough accompanies the episode and the sputum is a variable quantity. With the release of the obstruction it is usually abundant, greenish and tenacious.

The physical findings of massive collapse vary in degree and nature. Obviously the extent of the process will determine certain of the variables. Where the collapse is of sufficient extent to give rise to physical signs, there will be found a narrowing of interspaces on the affected side, displacement of the trachea and cardiac apex to the involved side, dullness, decreased vibratory phenomena and breath sounds over the collapsed area. At other times there may be an increase of tactile fremitus and vocal resonance with bronchial breath

sounds when the communicating bronchus is patent. In the same patient these signs may change from time to time. Râles of varying orders appear periodically. Friction rubs indicate the reactive pleurisy. Of all signs the displacement of the apical impulse and of the cardiac dullness to the affected side will serve the most valuable purpose in the diagnosis and differential diagnosis of massive pulmonary collapse. So important is this detail that no surgical procedure should be undertaken until the apical impulse is marked with a dot of



Fig. 5. Postoperative massive collapse of the lung.

silver nitrate or other indelible substance. Diagnostic consciousness of this complication will smooth many of the obstacles to its recognition. The laboratory offers the inestimable aid of the roentgenologic study (Fig. 5). A dense homogeneous clouding marks the site of collapse. The trachea, heart and great vessels are more or less sharply displaced to the affected side. The interspaces on this side are narrowed and the diaphragm elevated. The diaphragm is immobile to fluoroscopy.

The bronchial obstruction may occasionally be momentarily dislodged and the symptoms and signs released to recur in a short time. As a rule, however, a few days mark the active course of the process and the release of the obstruction is marked by the expectoration of plugs of clotted blood or considerable tenacious mucopus as stated above. Coincidentally the clinical picture fades, unless there has occurred a superimposed bronchopneumonia. This circumstance doubtless explains the protracted course of certain cases of massive collapse.

If the mechanism of atelectasis of the lung be



admitted, its control would logically start in the prevention of conditions upon which it depends. Avoidance of the aspiration of mucus, blood and the like should be attempted. Immobility of the thoracic cage and the diaphragm must be obviated within reasonable limits. In this direction, details such as the deterring influence of hypodermoclysis in the subpectoral region upon respiratory activity must not be overlooked. Postural factors should be observed. Artificial overventilation by the utilization of the normal respiratory hormone, carbon dioxide in concentrations not exceeding eight per cent, may serve a definite function in reducing the incidence of massive collapse. After this accident has occurred, the use of carbon dioxide is less logical, and in practice less useful. Postural drainage is encouraged by turning the patient from side to side.<sup>6</sup> The occasional dislodgement of the offending material by this maneuver justifies its trial. The most effective procedure is bronchoscopic aspiration<sup>7</sup> and the results from its use are frequently dramatic and occasionally life-saving.

In summary certain generalizations seem justifiable. The postoperative respiratory complications are so important from the standpoint of morbidity and mortality as to exact a most careful assessment of candidates for surgery from a respiratory and a circulatory standpoint. In the presence of any evident or suspicious cardio-respiratory contraindication a sharp definition into surgery of election and of necessity is in order. All other factors being equal, surgery is safest from respiratory complications in the summer months and most dangerous in the winter. Surgery of necessity must be undertaken in the face of all risks. The choice of the anesthetic agent is always a serious question, second only to that of the anesthetist. The depth and the duration of anesthesia are important contributory factors to these troublesome and dangerous obstacles to surgical security. Paralysis of the intercostal muscles in spinal anesthesia offers a serious handicap to a method affording many obvious advantages. Clearly prophylaxis is more important than treatment and the end of medicine in this direction should be to render surgery much less hazardous from preventable sources of these complications.

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## FUNDAMENTAL PATHOLOGY IN PROGRESSIVE TUBERCULOSIS, PRIMARY AND REINFECTION\*

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Koch's discovery of the tubercle bacillus more than fifty years ago stimulated a great deal of scientific investigation of phthisis by clinicians, bacteriologists and pathologists. In recent years immunologists and roentgenologists have contributed greatly to our knowledge of the disease. With the enormous amount of research on every phase of the tuberculosis problem which has taken place, it is not at all surprising that wrong conclusions were drawn and that gaps in our knowledge became all too evident. In spite of the errors and misconceptions of the past and the problems still unsolved, we have a much clearer understanding of the results of the invasion of the human body by the tubercle bacillus than ever before. The purpose of this paper is to review the fundamental pathology of the primary and of the reinfection types of tuberculosis based upon the investigations of the last fifty years.

## PRIMARY INFECTION

Rarely tubercle bacilli invade the body through the skin, conjunctiva, middle ear, nasal mucous membrane, tonsils or genitalia. More frequently the point of entrance is the intestine which the organisms reach through infected food, particularly milk. In the great majority of instances infection occurs by way of the respiratory tract and therefore in this discussion pulmonary tuberculosis will be considered as synonymous with tuberculosis of the other organs. Tubercle bacilli may reach the lung by way of the blood stream, but direct inhalation of infected dust or droplets of sputum, practically always from some human source, accounts for most primary pulmonary infections. When inhaled the bacilli reach the peripheral portions of the lung and the primary lesion which is usually single is found just beneath the pleura. It may occur in any part of the lung but the lower lobes are more frequently involved and the apex very rarely so. Thus Sweany<sup>1</sup> found forty-two healed primary lesions in the upper and middle lobes and sixty-two in the lower lobes.

The character of the primary reaction of non-immune tissues depends upon the number and virulence of the organisms and upon the individual's constitutional reaction to the tubercle bacillus; whether one of great susceptibility or one of marked resistance depends upon many general factors such as age, nutrition, social environment, et cetera. While we have no dependable

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method of evaluating these factors, we recognize chronic fatigue, malnutrition, unhygienic surroundings and intercurrent or debilitating disease as important items in lowering the resistance. In the past much has been said of racial susceptibility, but studies of the American Indian, Negro, and Mexican by Johnson and Myers<sup>2</sup> indicate no essential difference in the course of tuberculosis in these and other races. Ignorance of the communicability of the disease probably explains the increased prevalence in these and similar races. All the above factors are subject to fluctuation at different periods in the life of an individual and therefore the response to the presence of the tubercle bacillus will also show variations.

In some instances the organisms may be present in the lung without causing any response but usually the reaction is like that caused by the presence of a foreign body. Typically it is characterized by the formation of mononuclear tubercles. It is conceivable, however, that with a large number of virulent organisms the tubercles might be of the soft type or that abscesses might be formed as Medlar and Sasano<sup>3</sup> produced experimentally in animals. The usual result is the formation of a round, caseous bronchopneumonic focus which is sharply demarcated from the surrounding lung and situated just beneath the pleura. As the non-immune tissues offer little resistance to the passage of the tubercle bacilli, the latter quickly reach the tracheobronchial lymph node by way of the lymphatic glands. The lymph node becomes greatly swollen and caseated. The association of the caseous foci in the lung and in the regional lymph node is designated as the primary complex. Another affect of the phagocytosis of tubercle bacilli which takes place in the primary lesions is the release and absorption of tuberculoprotein. This results in sensitization of the body cells to tuberculin and they are said to be allergic. Until recently it has been thought that allergy was an essential link in the immunity mechanism of tuberculosis, but this conception has been challenged by Rich<sup>4</sup> who believes that it is not necessary and that it may be actually harmful. Whatever the final answer to this problem may be, we know that sensitization of the body cells results in a change in their reaction to any secondary tuberculous infection, whether endogenous or exogenous.

The course of the primary lesion in the lung is variable. In most instances the lesion heals by fibrosis, calcification or ossification. In others it extends rapidly by contiguity, may involve large areas of the lung, and cause death especially in childhood. In another small percentage of cases, healing is only partial and the lesion is said to be quiescent. Such lesions are particularly important

since they harbor living bacilli which are always potential sources of endogenous reinfection. As has been emphasized by Robertson<sup>5</sup> even apparently healed lesions may contain living bacilli for long periods of time. As long as they are present reactivation is always a possibility.

The caseous tracheobronchial lymph nodes undergo changes similar to those in the primary focus in the lung. The swelling and caseation is usually more marked, but healing by fibrosis and calcification is the usual outcome. In other instances the process extends to neighboring nodes. A constant danger is that a caseous node may rupture into a bronchus, the pulmonary vein or the thoracic duct. Such an invasion of each structure may be visible grossly or may only be found on microscopic examination. As a result of rupture into a bronchus the infected material is aspirated into one or both lungs. As allergic hypersensitization is well developed, lobular areas of rapidly caseating bronchopneumonia are formed. The result of the invasion of the pulmonary vein or the thoracic duct will depend upon the number and the rapidity with which the bacilli gain access to the blood stream. If only a few enter at a slow rate metastatic tubercles form in different organs, i.e., lungs, bone, adrenal gland, brain, urogenital organs and skin. If large numbers of bacilli enter the blood stream suddenly, acute miliary tuberculosis involving all the organs in the body results. Depending upon the variations in the degrees of the immunity and allergy that have been developed the tissue reactions will vary between the typical mononuclear and the rapidly caseating types of tubercles. Acute miliary tuberculosis results in death. Infection of one or more organs is far more frequent than the acute miliary type.

Before considering the reinfection types of phthisis it seems advisable to indicate that there are two theories as to how reinfection occurs. In 1916, Ranke<sup>6</sup> developed his conception of phthisis as being the final phase of systemic tuberculosis which has localized in the organs, particularly the lungs. Ranke's conclusions were based on the demonstration of the significance of the primary complex by Albrecht<sup>7</sup> and particularly by Ghon<sup>8</sup>. French clinicians were in essential agreement with Ranke's conception. In Germany, however, Orth<sup>9</sup> and Roemer<sup>10</sup> advanced the idea that phthisis was due to reinfection rather than to a primary infection although it was recognized that endogenous reinfection was a possibility. Since Aschoff's<sup>11</sup> visit to this country in 1924 American medical thought has been dominated by his theory that pulmonary phthisis is due to a new exogenous infection entirely independent of the first infection. During the last ten years, however, other German



workers have become more critical of Aschoff's views and have presented pathologic and clinical evidence of the close relationship between the primary infection and chronic pulmonary tuberculosis or phthisis. Recently Wingfield<sup>12</sup> in England and Miller<sup>13</sup> in this country have also emphasized the importance of the endogenous sources of reinfection of the lung as outlined above. All agree, however, that exogenous reinfections occur frequently. The main point at issue is the relative frequency of the two sources of reinfection. Myer's<sup>14</sup> studies among students of medicine and nursing give strong evidence of how frequently reinfection may occur in these two groups. Probably like studies upon the general population would give similar evidences of the frequency of exogenous reinfection.

#### REINFECTION TYPE OF TUBERCULOSIS

The primary type of tuberculosis infection is rarely seen in adults though it may be encountered in individuals who reach adult life before being exposed to infection. The primary complex is usually represented by inconspicuous scars or points of calcification in the lung and hilic nodes. In the adult patient dying of progressive pulmonary tuberculosis, better termed phthisis, it may be impossible to discover even these evidences of the primary infection because of the complexity of the pathologic picture presented. At autopsy the most frequent tuberculous lesion encountered in adults is the apical scar. This may appear as a flat or depressed silvery gray scar at the apex of the lung. On section it may show only a dense pigmented scar with projections into the surrounding lung, or it may be calcified. In other instances a caseous focus may be found in the center, or at times caseation may be fairly extensive even in individuals dying from other causes. The histologic picture may show all the transitions from a dense scar without signs of activity to a frankly active tuberculosis. Opie<sup>16</sup> and others believe that this apical lesion is due to an exogenous reinfection and in the examination of the tuberculous lungs of adults it is usually evident that the process began at the apex or just below. In some cases we find that reinfection occurred in other portions of the lung and it is in this group that the possibility of endogenous reinfection should be considered. Just why the process localizes near the apex so regularly has never been satisfactorily explained, although theories concerning the poor blood supply with impaired nutrition of the apical tissues, and regarding the lack of mobility resulting in poor ventilation, have been advanced as possible explanations. Frequently the apical or subapical lesion progresses to form a small cavity which may communicate

with a bronchus. Such a cavity may heal but often grows by extension in spite of the resistance offered by the formation of a fibrous tissue encapsulating zone. As the bacilli grow into the tissues, the capsule undergoes further caseation and necrosis so that the cavity may reach a considerable size. At any time infected material may pour into a bronchus and reach the lower portions of the same or the opposite lung producing more or less widespread secondary lesions. Another result that may occur is the erosion of a minute artery near the apex giving rise to the small hemorrhage which is so often the first sign of tuberculosis. Massive hemorrhage occurs in cases where the destruction of the lung proceeds rapidly and a relatively large artery is eroded.

The character of the secondary lesions in the lungs depends upon the number and virulence of the tubercle bacilli, the degree of allergy and the resistance offered by the tissues. It is evident that with the several variable factors there will be variation in the pulmonary lesions. At one extreme will be an intense reaction resulting from numerous virulent bacilli invading allergic tissue, characterized by exudation with little attempt at repair. At the other extreme is the reaction of highly resistant tissue to a small number of organisms of low virulence which is essentially reparative in character and with slight exudative characteristics. Every possible combination of the exudative and reparative processes are found at autopsy.

In those cases where the exudative reaction predominates there is usually a cavity in the apical region with little attempt at healing in the surrounding tissues. The cavity contains liquefied necrotic material with enormous numbers of bacilli which entering a bronchus are disseminated by gravity or by coughing to the terminal bronchioles in the lower portions of the same or opposite lung. The walls of the bronchioles undergo hyalinization and necrosis and the process extends to the adjacent alveoli; thus small or large patches of pneumonia result. By confluence, an entire lobe may be involved by a rapidly caseating mass. At times the pneumonic areas are surrounded by zones of edema from which viscid fluid exudes and are examples of caseous and gelatinous pneumonia.

The histologic picture varies in different areas. The alveolar exudate in fresh pneumonic areas is composed of large mononuclear and lymphoid cells, red blood cells, polymorphonuclear leukocytes, fibrin and large numbers of tubercle bacilli. The walls of the alveoli are infiltrated with similar cells. At the periphery the alveoli contain large mononuclear cells often laden with fat as well as

pink staining fluid. The whole central portion of a pneumonic area may become necrotic and a pink staining more or less homogenous mass in which the phantom of the lung can be made out. Large areas of the lung may liquefy and be discharged through a bronchus and cavities of variable size are formed. If the patient has lived long enough even in such a rapidly progressive pneumonic process, evidence of resistance as indicated by an attempt at repair may be found in the peripheral portions of the lesions.

The above rapidly progressive necrotizing process is encountered less frequently than is the second general type of reaction in which the tissues of the lung offer considerable resistance to the extension of the infection. Probably the dosage of the bacteria in numbers and virulence is low and the tissues have developed a relatively high degree of immunity. In this type of the disease the reaction is more chronic in type as indicated by typical epithelioid tubercles with central caseation and by marked connective tissue proliferation in their peripheries. Caseation and repair tend to go hand in hand. The lung may show extensive fibrosis intermingled with fairly large areas of caseation or with only a scattering of minute tubercles. The tendency to form cavities is less pronounced but they are usually found near the apex. Sometimes the cavities reach a considerable size and not infrequently thickened blood vessels may extend through such a cavity or along its walls. Hemorrhages would be common if it were not for the fact that the lumen of such blood vessels had been obliterated by organized thrombi or by marked thickening of their walls. The tuberculous process may be confined to one lung, or the opposite lung may be slightly or extensively involved. An ever present danger is that caseous material may empty into a bronchus and cause a caseous lobular pneumonia. As in the rapidly progressive process the lymph nodes at the hilum are only slightly involved in distinction to their marked involvement in the primary infection. While there may be no evident gross changes microscopically they usually show a few mononuclear tubercles. As the result of the constant expectoration of sputum containing tubercle bacilli, tuberculous laryngitis is common, or if the sputum is swallowed, tuberculous ulcers of the intestine are likely to occur. In other words dissemination is usually by what has been termed intracanalicular spread, that is, through the normal canals of the body. Hematogenous spread is possible but rare.

Another important phase of pulmonary phthisis is extension to the pleura. Very frequently this

causes patches of fibrin to appear on the pleura and considerable serous fluid to accumulate in the cavity. This pleural effusion which is so frequently the first sign of tuberculosis is often absorbed and only a few fibrous adhesions to the chest wall result. With more extensive involvement the pleural cavity may be almost obliterated by the adhesions. Another common picture is that in which the pleura is greatly thickened by granulation and scar tissues with numerous caseating foci. Finally with extensive destruction of lung tissue a cavity may rupture through the pleura and a tuberculous empyema, a pneumothorax or a combination of the two results. Obviously in such cases collapse of the lung follows unless extensive adhesions bind the organ to the chest wall. Similar changes occur in the pericardial sac as the result of infection which may occur.

#### SUMMARY

1. A sharply delimited caseous bronchopneumonia with an associated caseous tracheobronchial lymph node is the usual result of primary infection of the lung by tubercle bacilli.

2. Most commonly the primary lesions heal by fibrosis, calcification and ossification. Occasionally they progress rapidly and may cause death, especially in children. In some instances they are only partly healed and may become reactivated after short or long periods of time. The spread of the primary infection is largely by bronchogenic or lymphohematogenous routes and result in caseating bronchopneumonia; metastatic organ tuberculosis or miliary tuberculosis.

3. The primary infection causes a variable degree of specific immunity against the tubercle bacillus and also in a variable degree of sensitization to tuberculin.

4. In the reinfection type of pulmonary tuberculosis the reaction of the tissues is essentially a process of inflammation and repair. The type of reaction which predominates depends upon the individual's constitutional make up; the degrees of immunity and allergy conferred by the primary infection and the dosage of tubercle bacilli.

5. They vary between an essentially exudative process with very little attempt at repair and one in which the reparative process predominates and exudation is slight.

6. The reinfection type of the tuberculosis is disseminated largely by intracanalicular spread and rarely by the hematogenous route.

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## AMEBIASIS

### A REPORT OF SIX CASES\*

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Amebiasis has been considered a tropical disease and until the past two years its presence in the middle west has not been generally appreciated. The purpose of this report is to present six cases of amebiasis seen in the University Hospital during the past eighteen months.

Case 1. A white female, fifty-six years of age, was admitted to the University Hospital March 29, 1934, complaining of diarrhea. In the summer of 1929, while working as a maid at a Chicago hotel, the patient had diarrhea for one month. During the summer of 1931, while still in Chicago, she had a second attack of diarrhea of two months' duration. A third period of diarrhea occurred from January to March, 1933. Each of these attacks subsided with simple remedies. The present attack began eight months before admission to the University Hospital, with six to twelve stools daily; for two weeks prior to the date of admission blood had been noticed.

The physical findings, other than pallor of the skin and marked tenderness during the rectal examination, were not remarkable. The urine and blood studies, including Wassermann and Kahn tests, were negative. Occult blood was present in the stools but amebae were not found. An x-ray

examination of the colon showed some loss of the haustral markings. A proctoscopic examination revealed several small ulcers at the rectosigmoid junction and the exudate from one of the ulcers showed many active amebae.

The patient was given emetine hydrochloride intramuscularly in doses of one grain daily for ten days, followed by 0.25 gram of vioform, orally, three times daily for ten days. The stools became normal in appearance and were free of amebae and occult blood. A proctoscopic examination was then made and no ulcers were seen in the lower bowel. The patient was discharged on her thirty-eighth hospital day, with the advice to continue treatment under the direction of her local physician.

Case 2. A married white male, forty-six years of age, was admitted to the University Hospital July 23, 1934, complaining of bloody diarrhea of six weeks' duration. Five years prior to admission, while working in southern Illinois, a diarrhea began which lasted for two and one-half years. The stools frequently contained blood and mucus. The symptoms stopped abruptly following three intravenous injections of emetine and two injections of "fibrogen". The present attack of diarrhea was accompanied by severe abdominal cramps and gross blood and mucus in the stools. The symptoms were unaffected by "fibrogen".

The physical findings, other than marked tenderness during the rectal examination, were normal. The urine, hemoglobin and red blood count were normal. The white blood count was 10,000. The blood Wassermann and agglutination tests for typhoid fever, Malta fever, and bacillary dysentery were negative. The stools contained gross blood, a great amount of pus and mucus, and *Entamoeba histolytica* in active and encysted forms. An x-ray examination revealed the lumen of the colon to be narrowed and irregular. A sigmoidoscopic examination revealed a dusky red mucosa studded with small ulcers varying in diameter from one to six millimeters.

Six daily intramuscular injections of emetine hydrochloride in one grain doses were given, followed by 0.25 gram of carbarsone twice daily for ten days. Emetine was then repeated as above. The symptoms improved greatly but the stools continued to show a few amebic cysts until the patient was discharged on his thirty-ninth hospital day with instructions to continue treatment at home.

Case 3. A married white male, thirty-four years of age, entered the University Hospital on October 23, 1933, complaining of diarrhea. On July 4, 1933, the patient and his family ate a picnic lunch with another family, one of the mem-

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bers of which had severe diarrhea, and on July 15, 1933, the patient and his wife and son developed a "bloody diarrhea." His wife and son recovered in about one month, but the patient's symptoms persisted until admission to the University Hospital, with an average of twenty to thirty stools daily. The blood in the stools persisted, and abdominal cramps and rectal tenesmus were noted. There was a loss of thirty-six pounds in body weight. The diarrhea did not improve with diets and simple remedies.

Generalized abdominal tenderness and a rosette of extremely tender hemorrhoids were the only remarkable physical findings. The white blood count was 21,300. The blood Wassermann test was negative. Agglutination tests for Malta fever, typhoid fever, and bacillary dysentery were negative. The stools contained gross blood, mucus, and many active forms of *Entamoeba histolytica*.

Emetine hydrochloride in one-half grain doses was given intravenously each day for seven days. There was prompt relief from the intestinal symptoms. After a week's rest emetine was repeated as above. The active forms of amebae disappeared from the stools but a few cysts were still present when the patient was discharged on his twenty-ninth hospital day to receive further treatment at home. A sigmoidoscopic examination on the day of discharge revealed a mucous membrane of normal appearance.

Case 4. A married white female, twenty-nine years of age, was admitted to the University Hospital on February 10, 1934, complaining of diarrhea. She had always been well until June, 1933, when a diarrhea with fifteen to twenty-five stools daily began and persisted to the time of admission. The stools were foul and contained blood intermittently during the fifth and sixth months of the illness. Abdominal cramps were present daily. Several people in her home neighborhood also developed diarrhea but all recovered in a short period of time.

The only remarkable physical findings were tenderness along the course of the colon, particularly over the sigmoid, and marked tenderness to rectal examination. A sigmoidoscopic examination revealed a very hyperemic mucosa with small ulcerations covered by a greyish exudate.

The urine, hemoglobin, and red blood count were normal. The white blood count was 11,700. The Wassermann test was negative. Agglutination tests for typhoid fever and Malta fever were negative. A roentgenogram of the colon showed a definite loss of haustrations throughout. The stools contained occult blood and on one occasion an actively motile *Entamoeba histolytica* was seen. Repeated stool examinations failed to reveal any

more amebae and cultures of the stools were negative for pathogenic organisms.

The patient was given one grain of emetine hydrochloride intramuscularly every day for six days. There was definite improvement in the intestinal symptoms and the stools decreased to two or three daily. The patient was discharged on her twenty-first hospital day and advised to continue treatment with chiniofon (Yatren) at home.

Case 5. A white married male, forty-two years of age, was admitted to the University Hospital October 16, 1934, complaining of diarrhea, night sweats, chills and fever. He was in Chicago for three days in October, 1933, and twelve days later developed a severe diarrhea. Amebae were found in his stools and the diarrhea was controlled by ten successive daily intramuscular injections of emetine hydrochloride followed in one month by two brown tablets daily for ten days. In February, 1934, the diarrhea returned and was controlled with emetine. Amebae continued to be found in the stools until June, 1934, when two capsules of carbarsone were given daily for ten days, following which the stools became normal and he gained weight. On October 2, 1934, he became nauseated and noted many vague pains about his body. There was one chill followed by daily sweats, weakness, and loss of appetite. The stools averaged two daily.

The patient was undernourished. The skin was moist and hot and there was slight tenderness over the upper abdomen with moderate rigidity in the right upper quadrant. The liver could not be felt but liver dulness extended six centimeters below the costal margin in the midclavicular line. The urine, hemoglobin and red blood count were normal. The white blood count was 28,200. The Wassermann test was negative. Agglutination tests showed a doubtfully positive reaction for the dysentery group and were negative for typhoid and Malta fever. Blood cultures were negative. A roentgenogram of the chest was negative and a sigmoidoscopic examination showed no evidence of disease. The stools showed a trace of occult blood and on one occasion cysts of *Entamoeba histolytica* were found, but no active forms were seen.

For the first ten days his temperature ranged from 101 to 102 degrees. He was then given one grain of emetine hydrochloride intravenously daily for ten days. The temperature fell to normal within forty-eight hours and the symptoms subsided. The liver edge was then felt two centimeters below the costal margin in the midclavicular line, but was not tender. The stool examinations at this time revealed no blood, amebae or amebic cysts.

After the liver had returned to normal size, 0.5 gram of carbarsone was given three times daily for seven days. There was no evidence of a toxic



hepatitis from the carbarsone therapy. The stools continued negative for occult blood and amebae and there was no evidence of ulceration on sigmoidoscopic examination. The patient was discharged on his forty-second hospital day with advice to continue treatment at home.

Case 6. A white married male, fifty-three years of age, was first admitted to the University Hospital October 10, 1932, complaining of a dull ache in the rectum and the passage of dark clotted blood per rectum. Two months prior to admission a sense of fullness in the rectum and an almost constant desire to defecate were noted. In spite of this he was constipated and took mineral oil daily. He had also noted some bright red blood in his stools but no mucus or pus. His stools were noted to be smaller in caliber than formerly. He had lost twenty pounds in body weight.

The physical findings, other than two small soft masses on the anterior wall of the rectum, were not remarkable. A proctoscopic examination revealed a large amount of mucus in the rectum and an area of folded mucosa five inches from the anus which was hyperemic and ulcerated. Above this the mucosa appeared normal.

The urine, hemoglobin, and red blood count were normal. The white blood count was 12,000 and the Wassermann and Kahn tests were negative. The stools were formed but contained mucus and occult blood. No parasites were found in the stools.

The patient improved rapidly with a smooth colon diet and tincture of belladonna. The stools became normal and he was discharged on the thirty-sixth day with a diagnosis of ulcerative proctitis.

About one month after discharge the symptoms returned with diarrhea, bloody stools, and difficulty of defecation. This continued more or less constantly until about two months prior to his last admission on August 23, 1934, when it became more marked. A tender bulging mass was noted in the right upper abdomen two days before his admission. There had been no chills or fever.

The patient was emaciated, dehydrated, drowsy, and appeared to be severely ill. The liver extended twelve centimeters below the costal margin in the midclavicular line. A tender, fluctuant mass, seven centimeters in diameter, projected from the liver just beneath the costal margin. There was generalized abdominal tenderness and the sigmoid was tender and spastic. The anal sphincter was spastic and there was tenderness throughout the rectum. The urine contained a moderate amount of albumin. The hemoglobin was 74 per cent, the red blood cells 3,690,000, and the white blood cells

7,400. The blood Wassermann and Kahn tests were negative. The stools contained gross blood and mucus. Microscopically many actively motile forms of *Entamoeba histolytica* were seen.

The patient was given one grain of emetine hydrochloride intravenously every day for ten successive days with rapid cessation of the intestinal symptoms and disappearance of amebae from the stools. The liver edge receded about four centimeters but the mass was unchanged. A friction rub, which gradually became less intense, was heard over the liver. A roentgenogram of the liver region showed enlargement of the liver and elevation of the right diaphragm.

Three weeks after admission he was given another course of emetine intravenously. Following this the liver edge receded two centimeters, but the mass was unchanged. Except for the first two days after admission the temperature was normal, but the pulse rate ranged from 90 to 110 per minute.

On the forty-fifth hospital day the hepatic abscess was drained and 2,000 c. c. of creamy sterile pus were removed. Drainage was profuse for several days but gradually decreased in amount. The patient improved rapidly and the stools were negative for amebae but continued to show occult blood.

The patient was then given emetine hydrochloride in doses of one grain intramuscularly daily for ten days, followed by 0.5 gram of carbarsone three times daily for seven days. There was no evidence of toxic hepatitis from the carbarsone therapy. The stools became normal in appearance and were negative for amebae, amebic cysts, and occult blood. A roentgenogram of the colon showed no evidence of ulceration, but the haustral markings were definitely increased. A sigmoidoscopic examination showed three small, shallow ulcers in the lower sigmoid. The patient was discharged on the ninety-fifth day with advice to continue treatment at home.

These patients came from different localities scattered over the state of Iowa and although two cases (the first and the fifth) apparently originated in Chicago, only the fifth case was directly associated with the recent Chicago outbreak. This emphasizes that amebiasis is endemic in the middle west and should be considered in all cases of acute, chronic, or recurring diarrhea. Constipation may be present as is illustrated by the sixth case at the time of the patient's first admission to the hospital.

Amebiasis is probably most commonly confused with ulcerative colitis in this section of the country. In two of our cases (the second and the sixth) this mistake was previously made. The fourth case was

thought to be one of mucous colitis or irritable bowel until amebae were found in the feces.

The diagnosis of amebiasis depends upon the finding of active or cystic forms of *Entamoeba histolytica* in the feces or in the smears obtained by proctoscopic examination. The vegetative forms may not be found except during the stage of diarrhea, but the cysts usually persist, and the State Public Health Laboratory is equipped to examine specimens for cysts. Hepatic amebiasis may be observed in the hepatitis stage, as in the fifth case, or in the abscess stage, as in the sixth case. In either instance the diagnosis depends upon the finding of amebae as in the intestinal form. Subphrenic abscess and all other possible causes of hepatic enlargement should be excluded.

The available useful drugs for the treatment of amebiasis are emetine, the arsenicals (acetarsone or carbarsone) and the oxyquinoline derivatives (chiniofon or vioform). It is generally agreed that emetine is a dangerous drug and will not free the patient of the parasites but that if given with caution it is perhaps the most valuable remedy for the control of the acute intestinal symptoms and for the hepatitis. Even though these features of the disease have been eliminated by the administration of emetine, they are likely to return unless other drugs, such as the arsenicals or oxyquinoline derivatives, are employed. The consensus is that the arsenicals are preferable to the oxyquinoline derivatives in intestinal amebiasis, but both are contraindicated when an involvement of the liver is present. It is extremely important that these cases be checked from time to time to insure as far as possible a permanent cure.

#### SUMMARY

Six cases of amebiasis seen at the University Hospital during the past eighteen months are presented. Two of the patients had hepatic amebiasis.

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## THE PATIENT—PHYSICIAN RELATIONSHIP SHOULD BE MAINTAINED\*

HOWARD J. HARTMAN, M.D., Waterloo

The relationship between the patient and the physician always has been and always will be the most important part of the practice of medicine. However, for some time now this relationship has been challenged, and the "old family doctor" is rapidly becoming a thing of the past. What relationship we continue to maintain has been threatened more than ever during the past year by the advocates of socialized medicine.

Just what is the practice of medicine? It is truly an art, based to an increasing extent on the medical sciences, but comprising much that still remains outside the realm of science. Every art is personal and the practice of medicine is an entirely personal matter. The physician must know his patient personally, must study the relevant and apparently irrelevant facts, must know the real pains, the psychic as well as the physical. He must know his patient and understand him spiritually and physically. That necessary confidence which the patient must have in his physician is only gained through personal contact and interest in the patient. When a patient goes to a physician, he usually has confidence that the physician is the best, or at least the best available person to help him in what is for the time being his most important problem. If you approach him with sympathy, tact and consideration, you obtain his confidence and he becomes your patient.

From a layman's point of view a very important thing is the doctor's manner, and there are two sorts of manner which are popular, the kindly sympathetic one, and the gruff efficient one. The former is the more popular, and usually just as efficient. The doctor's personality also counts a great deal, and the cultivation of simple courtesy is a most important part of medical training. In this latter respect, I believe our medical training is at fault; our hospital practice tends to be too impersonal. The treatment of a disease may be entirely impersonal, and in hospital practice we often forget about the care of the patient which must be completely personal. The significance of this intimate personal relationship cannot be too strongly emphasized, for in a large percentage of cases both diagnosis and treatment are directly dependent on it, and the failure of the young physician to establish this relationship accounts for much of his ineffectiveness in the care of patients.

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In the hospital, especially large hospitals where internes and medical students are trained, the patient usually at once loses his personal identity, he is referred to as patient in Room 202, or the case with pernicious anemia, third bed to the right in Ward 6A. This leads to the patient being treated as a case of pernicious anemia and not as a sick man. He probably lies awake nights, worrying about his family or some other responsibility, and does not get well because of the anxiety. A talk with an understanding physician to help straighten things out, would do more for him than a carload of drugs or diets.

In hospital practice often as soon as organic disease is excluded in a patient the whole problem is dismissed, the patient is told nothing is wrong with him, and he is sent home still a sick man. A goodly percentage of our patients complains of symptoms for which no adequate organic cause can be found, but we should remember that not many people are stupid enough to go to a hospital or a physician's office instead of to the theatre or a bridge tea, unless there is something wrong. These patients come under the broad diagnosis of the "psychoneuroses." Their symptoms, it is true, will rarely prove fatal, but their lives will be long and miserable. It is said that "Death is not the worst thing in the world, and to help a man to a happy useful career may be more of a service than the saving of life." In these patients, the physiologic functions are upset by emotional stimuli and the symptoms produced, such as emotional vomiting and nervous headache, obviously are not due to anatomic changes, but are nevertheless, disturbing and there is nothing imaginary about them. Thus, in all our patients whose symptoms are functional in origin, the whole problem of diagnosis and treatment depends on our insight into the patient's character and personal life. The good physician knows his patients through and through, and his knowledge is dear.

I wonder, too if in hospital practice and training of medical students, the laboratory side has not been over-emphasized, and the student instead of arriving at a diagnosis through personal contact with the patient, has resorted to many early and often repeated laboratory tests. It should be the function of a clinician to determine by the history and physical examination what tests are required to complete the diagnosis.

In these present times, there are still other phases in maintaining a close relationship between physician and patient. One is the giving of medical information by the doctor to the patient. People are better educated today, and the unwillingness on the part of the doctor to disclose the cause of the patient's trouble is often regarded

as evidence of ignorance by them. Tact is another important item; a tactful doctor is a blessing, a tactless one a curse. Real tact like good manners is natural and unobtrusive. Punctuality in keeping appointments and answering correspondence is, from a layman's point of view, most essential to a doctor. This characteristic depends on the art of organizing the day properly. Self-reliance and presence of mind are most essential and a doctor who loses his head is almost certain to lose his patients. Then, finally, optimism, geniality and a sense of humor are invaluable assets to a doctor.

Thus far, I have dealt only with those things which are essential for a close relationship between the doctor and the patient. Dr. Hill is going to tell us about health insurance, and so I will not go into any detailed description of it, but will touch only briefly, as time will permit, on its influence on the patient and physician relationship. The system, which we now have in the United States is not perfect perhaps, but conditions imposed by health insurance are far worse. Health insurance is a type of socialized medicine. It is impossible to socialize the doctor unless the business man, the banker, and the lawyer are socialized, too. Surveys have shown that people of the United States are not receiving medical care adequate to their needs. Exactly the same can be said of housing, clothing, education, food or almost any other essential of a healthy life. Until the time comes, if it ever does come, when we have communism, health insurance simply will not work. The important consideration is to have these plans and panaceas worked out to the satisfaction of both the patient and the physician. None seems to be able to say conclusively whether health insurance in Europe as a whole has been a success or not. Several surveys have been made by more or less prejudiced groups, with the result that the reply is usually an emphatic yes or no; and after all the real issue is not so much whether health insurance has been a success in Europe as whether it would be successful in the United States, and work out to the advantage of physician and patient alike.

Under compulsory insurance, the control of treatment inevitably passes from the medical profession to the large bureaucracy, and the interposition of this third party erects a barrier of suspicion between the doctor and the patient, thus destroying the confidential relationship which is so essential. Such schemes destroy everything which makes the healing art effective. The new face coming between the doctor and patient is that of an inspector, a supervising physician, or an insurance bureau bookkeeper, questioning this

and that particular without the intimate understanding derived from having seen and known the patient. This person does not care whether the patient lives or dies, only how much he costs the fund. The medical practice becomes a business instead of a profession, and thus, we destroy a truly healing relationship of which trust and confidence is the base, and substitute a chain store, cut rate imitation which corrodes curative values needed to heal the sick.

The contract system destroys the human element in the practice of medicine and the "old family doctor" does become just a memory. Mutual free choice of a physician is basic to good medical care and as stated before, if the patient comes to the doctor because of confidence in him and not merely because he is an insurance doctor, interest and insight are quickened.

Every patient is an individual medical problem; health insurance cheats both the patient and the doctor. Dr. Jacob L. Moreno of New York City, who had six years of experience with insurance in Austria says, "It is a measure that gives poor medical care, and physicians degenerate into callous machines turning out standardized treatment for patients, and such measures actually retard progress." He further states, "I know from experience with actual reality that no matter how rosy the picture of ideal care for the poor is presented by such schemes for health insurance, in practice they do not work. They cannot work because they fail to take account of factors in human relations which are indispensable to the practice of the healing art."

Another especially bad feature of medical insurance is that there are so many patients waiting in line, that the rush system of handling them is inevitable; and consequently, the doctor soon becomes hardened and loses his morale. He does not have time to take any personal interest in his patient, and he eventually becomes just a part of the machine. Thus there is forced on the doctor an utterly impossible human task—to sustain a genuine personal interest in all the individuals of a miscellaneous crowd at his door.

Dean Lewis in his president elect's address said, "The relationship which now obtains between physician and patient must be preserved. The patient has an inalienable right to choose his own physician," and further "Many of those concerned with the cost of medical care have had no connection with patients, do not know the problems which are encountered and seem to believe that organization is the panacea. The personal relationship between patient and physician is the compelling motif."

I will admit that under certain circumstances,

there is a necessity for group clinics, but we will all insist that the bulk of medicine is on the basis of personal relationship between the physician and patient. Thus in order to maintain this relationship, we must reject all panaceas, and the proposals contained in the majority report of the Committee on the Costs of Medical Care. The schemes so presented, as a therapy are grand and magnificent, but scientifically they are bad and unsound. This has been proved again and again by European experiences. They do not suit the American people nor their physicians. In short, the principles involve bad sociology and bad medicine.

In conclusion then, that type of medical practice which preserves the personal relationship between the physician and patient, that maintains the practice of medicine as a profession and not a business, and that has withstood the test of centuries must be preserved for the interests of both the public and the medical profession.

## HEALTH INSURANCE IS NOT THE REMEDY\*

JAMES C. HILL, M.D., Newton

An earnest, painstaking study of national health insurance as it was instituted, as it progressed and as it exists today in foreign countries reveals the following very striking information.

1. Sickness insurance is now and always has been an insurance against poverty. This is true regardless of whether the poverty is due to unemployment, to overwork in industrialism, or to illness.

2. Its introduction as a political measure, and not one demanded by the mass of the public, is a very characteristic fact. It was claimed to be in the interest of the underpaid workers, but they never wanted it, nor did the trades unions. "No health insurance system owes its introduction to any labor or socialist party." Politics and good medicine are not compatible.

3. The systems have been highly experimental in character. Their operations have continually undergone changes especially in Germany and Austria. In Germany alone there exist three thousand sections in the laws on sickness insurance. The contract idea prevails in some systems and it is hard to retain the virtues of status in a contract system.

4. The personal choice of a physician has become largely lost, as well as the physician's full responsibility to the patient; thus the public has become dissatisfied.

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5. Physicians are placed under lay control, in the employ of executives of insurance companies who know nothing about medicine. In Great Britain the doctors are not in the employ of the state but largely in the employ of the insurance systems. Germany has a contract and insurance method of state medicine. In some countries the insurance carriers actually determine who shall practice medicine under the insurance system.

6. The whole health insurance scheme in European countries, on the part of the insurance carriers, is to mold the care of the sick into industrial and commercial patterns. Medical service in mass formation has always been of inferior quality.

7. Financial returns of the medical profession have diminished yearly under insurance systems.

8. In only four out of nineteen nations having sickness insurance was it found to be satisfactory to the insured and to the physicians. The system works best in those countries where lay control is least exercised.

9. In no country has it reduced the amount needed for poor relief.

10. Health insurance must be compulsory if it functions at all satisfactorily.

11. Encouragement of malingering and lack of the "will to get well" prevail in most systems.

12. Once established in any country, national health insurance has not been abolished because the evils of bureaucracy have become so thoroughly entrenched.

From the foregoing facts one would rightly judge that health insurance is not the remedy for the care of the great masses of low income group populations. Since such is the history of this monster we will do well to study its habits so that it may not gain a solid foothold on our national shores.

Let us next consider the causes of socialistic tendencies toward sickness insurance in the United States. I have grouped these causes as follows:

1. Industrialism with its rapid rise especially during the past twenty-five years, and the attempt on the part of insurance companies and employers to force medicine into industrial patterns.

2. Contract practice limited largely to the payroll class has in general become highly commercialized and competitive to a degree that it fails in a large measure to show interest in public or individual welfare. "Contract Practice in many of its present forms lowers the confidence of both the individual and the public in the medical profession." "It has some features that deserve refinement and extension and others that are unethical

and dangerous and should be abolished." Contract practice *per se* in medicine is not unethical, but it may be made unethical by the following conditions:

a. Where patients are solicited directly or indirectly.

b. Where there is underbidding to secure a contract.

c. Where compensation is inadequate to produce excellent service.

d. Where it interferes with reasonable competition.

e. Where the free choice of physician is not allowed.

f. Where patients cannot be well cared for under the contract.

No physician should accept a position to practice medicine for a commercial enterprise that dominates him in his service or stifles the desires of its employees for competent and personal service. The physician should be the sole judge of the patient's medical needs. Where a commercial enterprise dominates the physician, his future is most certainly jeopardized and he is surrendering his medical birthright.

3. The national depression which leaves such a vast percentage of our population without money or other means of paying for the necessities of life. This includes farmers, laborers, and many of our salaried population.

4. Rapidly increasing indigency with its increasing demands for public funds. At the present time more than 50,000 families are on relief rolls in Iowa and the number has diminished but little.

5. Certain organizations have rapidly created a sentiment in favor of state medicine. Among such organizations are the Veterans Bureau, Visiting Nurses Associations, tuberculosis clinics, prenatal and postnatal clinics, and periodic health examinations throughout pre-school years. We, as a profession have joined ourselves with public health agencies, the life insurance companies, state, city and federal health departments in creating a demand on the part of the public for public health measures.

6. Social workers manifest a changed or revolutionary interest in the nature of medical practice. They enter the fields of sociology, government, economics and health, and yet very few have a working knowledge in any of these fields.

7. A large majority of the medical profession has failed to make an exhaustive study of medical economics. They have an M.D. degree and a license to practice medicine, yet they have left it to their fellows to outline definite economic

policies or to follow the policies of the past one hundred years.

Since 1912 when national health insurance was introduced into England as a political measure, the American Medical Association through its officers and House of Delegates, has reviewed step by step its workings throughout the world. Repeatedly it has condemned and rejected it in any form in which it might be introduced. Likewise it has rejected all forms of state medicine. In recent years vigorous efforts by philanthropists, social workers, economists and various foundations have been made to convince the medical profession and the American people to embrace such a system of practice. The American Medical Association, through its House of Delegates, has arrayed all of its forces against propaganda and the trends of this system. In 1930 a Bureau of Medical Economics was established. Through its studies of health insurance and socialized medicine it has unraveled and torn to shreds the tightly woven fabric of these systems instituted abroad. In the past four or five years danger signals have flashed at every turn in our perilous path. In Cleveland last June a mandate, a decalogue, a code of laws, was enacted by our representative body for our guidance in exploration of the vast future in medicine. In February, 1935, our House of Delegates in special session in Chicago adopted the report of the Special Reference Committee. This condemned "regimentation" of the medical profession and lay control of medical practice as fatal to medical progress and lowering the quality of medical service. It again condemned compulsory sickness insurance whether instituted by federal and state governments or by individual industry, community or similar body. It condemned federal subsidies for medical service administered and controlled by a lay bureau. It condemned the provision of medical control in the Wagner and Epstein bills. The latter bill was branded as a "vicious, deceptive, dangerous and demoralizing measure." The House recommended a careful consideration of plans of medical care for low income groups undergoing "study and trial" in various communities of the United States. The recommendations of the Bureau of Medical Economics will be available at the June meeting for those serving rural, village, urban and industrial populations.

By way of experimentation in new forms of practice, good work is being done by the Wayne County Medical Society of Detroit. It established a medical service bureau and endeavors to meet today's problem of medical care of low income groups not through insurance, not through governmental or political agencies, but through the county medical society. The Bureau brings com-

plete medical care and also dental, hospital, nursing and pharmacal attention to employed wage earners of low incomes who pay for the service in small installments. The professions control the Bureau. The free choice of physician and the fundamentals of good practice are maintained.

A recent plan proposed by Gustav Hartz, a German labor economist, has some merit. He would substitute compulsory savings accounts for social insurance. An employee, instead of paying premiums for social insurance would be compelled to make deposits from his wages, into his interest bearing savings account. In the event of a national financial crisis he would be able to carry himself along and the state would care for the indigent only. Thus, independence of the employee with a savings account would be substituted for the dependence of the socially insured employee. In such a plan the state would control and regulate investment of the savings as any savings bank would do. A bank book would be substituted for a dole.

A number of other good plans are in operation to take care of these low income groups. The important features of these plans should be professional control, the free choice of physician, the patient to pay according to his financial ability and adequate medical care. These, at least, are fundamental in any component system for the care of these low income groups.

Regardless of excellent plans in operation, and proposed plans built around sound ethics and economics, the enemies of the best known system of practice have continued to advance. Great foundations through their apprentices in medical thought, bent on eradication of many of the tried and tested methods of all time, have carried the battle to our national arena. They have taken to the printed page, to the air, and to the highest law making body this side of Sinai. When compared with the giants of our noble profession they appear as the pigmies of Gulliver. Their appeal in Washington has reached a sympathetic ear, but the stalwarts in our profession upon whom we depend will be mightier than they. We have won the first decisive battle against health insurance, but we will have other battles in other days not far distant and they will be epoch-making.

Of all the social changes proposed or advocated in the field of medicine the provisions of the Wagner-Lewis bill are the most vicious as regards the control of medical practice. Maternity and child welfare, the care of crippled children, public health and accident compensation, in themselves, are all right. This bill would place medical matters in non-medical control, even in the Department of Labor. A social insurance board would direct



us in all medical affairs. Our troubles would far exceed those of the American Federation of Labor, as we would not be regimented in a Federal Department of Health or of Medicine but in the Department of Labor, whose chief just now is bent on uprooting medical democracy.

In conclusion let me say that I am in thorough accord with the program of the American Medical Association. I am unalterably opposed to compulsory health insurance on a national scale because:

1. It is undemocratic.
2. It has never reduced poverty although it has been introduced as part of an insurance against poverty.
3. It has not reduced the amount of indigency.
4. Its cost is gigantic and has increased yearly in the countries of the Old World.
5. It places the medical profession under lay control, or at least tends to subordinate it or to place it in a compromising position.
6. Like contract practice it lowers the quality of medical service.
7. It has reduced neither morbidity nor mortality. In the conquest of diphtheria on a national scale, a comparison under national health insurance and under our American system shows striking figures in favor of our American system of disease prevention, as well as in the cure of disease. Medical care in general, in private practice in this country is far superior to that of European countries when applied to the same classes to which insurance has been applied. The number of cases of diphtheria in Germany, Austria, England and Wales has increased during the past few years under insurance systems, but has decreased in the United States and Canada where no sickness insurance exists.
8. The free choice of physician may become lost in the administration of the program.
9. It destroys the initiative of the physician.
10. It promises little hope of freedom of research.

11. The Physician's income diminishes from year to year; in England from \$5,000 in 1913 to \$2,200 in 1933 for those working among low income groups.

12. It is a stepping stone to professional subjugation.

We have now come to the crossroads and face the greatest crisis in the history of American medicine. Economic losses due to the hazards of unemployment and to lack of income to finance sickness have grown to be heavy burdens to a large percentage of our industrial groups and to other low income groups of our population; but to date the great load for the care of the sick outside of the indigent and well-to-do groups has fallen on

the shoulders of the medical profession. After four years of this staggering burden about three-fourths of the flower of our profession would seem to be bankrupt; so, should we not individually and collectively, make known to our senators and representatives in Congress, our wishes in the program which may be enacted? The President has said "We must not lose sight of the fact that economic recovery must come before everything else and that unemployment insurance, as well as other parts of the economic security program, will have to be developed as a cooperative federal-state undertaking." This statement undoubtedly indicates that in the proposed sickness insurance program the states will have a vital part. This brings the whole matter closer home and adds to our local and individual responsibility.

The American Medical Association carries down to this present moment all of the priceless traditions of the past in the healing arts. It embodies all of those sacred principles of democracy as applied to medical practice and to scientific research. Its ideals have been raised high so that you and I and all may see and know them. Having arisen from a small group of the faithful, humanity loving, correct principled and seasoned patri-archs of their day, it now, in the fulness of time has spoken to us in stirring tones of warning. It admonishes us to weigh well our thoughts and actions toward those features of medicine known through the centuries to be basic. Our forebearers in political as well as in scientific fields were just as keen as we are today. They knew the subtlety of outside control of medicine. They encountered depressions. In the late seventies, in the nineties, and again in 1908, economic headaches were abroad in the land. No scarecrows of social security programs attained footholds in those days. Today there are forces that would tend to drive us into bewilderment. Economic chaos will not be the fate of the greatest medical profession on earth if we will but hold fast those principles which have carried us to our present strategic and unparalleled position. Health insurance and unemployment insurance have always been introduced abroad as political measures. The same is true in the United States today. There is no hue and cry coming from any large group that inadequate medical care is prevalent; the cry comes from a few well-salaried, long-haired, swivel-chaired doctors of philosophy, from lazy, hair-brained idealists, from a few smart business men who want to gain control of medicine for profit, and from a few genuine socialists who are praying for a social and economic millennium.

Health insurance is a hybrid offspring begotten by political preference, by poverty and senti-

mentality. It would seem to be a by-product of social and economic weakness and imbecility. With intestinal fortitude let us reject this thing before we become disemboweled. Right now let us dive to the bottom and behold the big fish that would devour us. In many countries of Europe this thing has hung like a mill-stone about the necks of the people, and some of them now are gasping from financial strangulation because of social and economic changes largely foisted upon them. Let three thousand miles of ocean separate us from this mirage. This new world in medicine has never known defeat, it has never tasted the bitter dregs of the subdued. We are free men. Let us preserve freedom for the sick, even for those who may not now appreciate this heritage of free choice. We will not sell our birthright for cash payments doled out by those who know nothing of our art; but if we do our interest will not be in the communists' red, but in the red ink of our bookkeepers.

Experimentation in medicine is not new. It is an aged characteristic. Let us study and weigh well any new form of practice that may appear on the horizon, but let us not upset the whole structure because one brick has slipped or because a lonely sentinel peers into the darkness and thinks he sights an enemy. The trek of the missionary is eastward. Let us show the Old World that social and economic turmoil in the new world will not shatter the medical fundamentals of the past. Let us preserve every jot and tittle of the sages of our cult and transmit them to generations yet unborn.

### THE PSYCHIATRIST AND INTERNAL MEDICINE\*

CHARLES F. OBERMANN, M.D., Clarinda†

It is not with the idea that anything particularly new is to be given that I am presenting this paper. The fact that the psychiatrist and internist have so much in common seems to justify the presentation of a subject which has been given many times before.

No physician be he internist, surgeon, dermatologist, or one limiting his practice to any of the other specialties can close his eyes to the mental side of his patient. All patients have minds. A doctor should be broader than his specialty; he should consider the patient as a whole and be qualified to treat both the body and soul. Often the general practitioner handles mental cases very

well because of his intimate knowledge of the patient and because of his common sense judgment as to care which is indicated.

It is true that many physicians throw up their hands either in despair or disgust when a mental patient comes to their office. There are a number of factors to account for this state of affairs. One factor is that until within comparatively recent years little or no time has been spent in teaching the subject in medical schools; this no doubt accounts for a lack of interest in mental disease on the part of many physicians. To many physicians, a mental case is disagreeable to care for. It is true that many patients will give no cooperation. They either talk too little or too much. It requires an extreme amount of patience to obtain a history and examination. Another thing that perhaps makes mental diseases undesirable to many physicians is the nomenclature and the tendency to changes in the psychiatric classification of mental diseases from time to time. However, in spite of the above factors one must come back to the fact that in no disease is early recognition more important than in mental disease. It therefore concerns the physician to be able to give advice on an abnormal mental condition and to decide whether the patient should be cared for in the home or should be sent to a suitable private hospital or an institution. Although it is not necessary that an accurate diagnosis be made, it is, of course, desirable.

In this connection, as a matter of interest, the diagnosis on the warrant of admission was checked with the diagnosis given by the staff of the Clarinda State Hospital on all patients coming from three representative counties since January, 1932. This study included 475 patients. It was found that the diagnosis on the warrant of admission indicated the same diagnosis made by the hospital staff in 56 per cent of the cases. One county had a rating of 47 per cent, another 59 per cent, and the third 63 per cent. On the other hand, there were only two cases out of the 475 admissions from the three counties that the medical staff of the hospital judged not insane.

In the large population of a state hospital, such as the Clarinda State Hospital, where there are over 1700 patients the psychiatrist must practice considerable internal medicine and the other branches of the profession as well as his specialty. Among the patient population of such a hospital the usual medical conditions occur incidental to the mental condition. On the other hand, there are patients whose psychoses are actually caused or precipitated by physical illnesses. The percentage of psychoses with metabolic and somatic diseases

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in the Clarinda State Hospital at the present time is only about one per cent. The cases of psychoses with cerebral arteriosclerosis and other disturbances of circulation make up about three per cent of the cases. This latter group of cases usually has a poor prognosis and there is not much to make them of special interest. However, in the other smaller group of psychoses with metabolic and somatic diseases there have been a number of cases, the conditions of which I feel you will be interested in having a short summary.

One case was that of a middle-aged farmer who was sent to the hospital because of an increasing abnormal mental condition which had been gradually progressive over a period of several years. A physician who had seen him in the course of his illness was frank in admitting that he did not know what was wrong with him except that he was "crazy." His abnormal mental condition consisted chiefly of a change of personality with a considerable coloring of paranoidal delusions. His history, physical, and neurologic examinations pointed to the diagnosis of pernicious anemia. Laboratory examinations completed the diagnosis of psychosis with pernicious anemia. This patient improved both physically and mentally after taking raw liver by mouth and liver extract intramuscularly. His blood picture also became more normal. He continued to improve so that he was allowed to leave the hospital under conditions of parole; since that time he has been continuing his liver therapy and getting along fairly well at home.

Another case had much the same syndrome and a similar diagnosis was made. This patient also showed marked improvement under similar management as the above patient. He was allowed to return home, but after a number of months was returned to the hospital because of a recurrence of his abnormal mental condition and increased neurologic symptoms. The second time he did not show the improvement when put on liver treatment, and continues to have a systematized paranoid trend of delusions.

Psychoses with pernicious anemia have been reported frequently. It is not surprising that mental symptoms should occur. Volumes of case reports of neurologic involvement, especially of the spinal cord, have been written. Often the subacute combined degeneration symptoms precede the typical abnormal blood picture. Early mental symptoms have also been described. It is also true that many cases of pernicious anemia occur in which no abnormal neurologic or mental symptoms are observed. Various theories have been advanced as to the etiology of pernicious anemia and as to why some patients develop neurologic

and psychiatric symptoms. Some writers feel that patients who develop mental symptoms with the disease do so because of a predisposition to insanity. Others feel that the condition is a general disease and that in some cases the nervous system comes in for more damage than others. In the cases reported here it was felt that there was a close relationship between the pernicious anemia syndrome and the psychoses.

Under the diagnosis of psychoses due to disturbances of circulation there have recently been two interesting cases in the Clarinda State Hospital. One patient had the history and findings, including electrocardiographic studies, of coronary disease. He came to the hospital because of variable psychotic disturbances which consisted of temporary periods of confusion especially at night, and of other evidences of cardiac disease. The cardiac condition responded to treatment, and improvement of the abnormal mental condition paralleled the physical improvement.

Another patient came to the hospital because of mental confusion and fearful hallucinations especially at night. The history of the development of his condition and the physical findings pointed to a chronic myocarditis. This patient also has made marked improvement under treatment of the heart disease.

These two cases were given the diagnoses of psychosis with cardiorenal disease according to the revised classification of mental disorders. The psychotic disturbance with this type of trouble varies. The symptoms described in the above cases are the usual findings. The striking thing is the marked fluctuations in the degree of mental clearness throughout the course of a day.

I also wish to refer briefly to another case which has been reported elsewhere. This patient came to the hospital in a very poor physical condition and with mental confusion, delusions, and visual hallucinations. The history stated she had had repeated attacks of gastro-intestinal difficulties and that shortly before her admission to the Clarinda State Hospital an exploratory laparotomy was done with negative findings and the removal of a normal appendix. Upon examination there was an unusual finding of red urine which was negative for blood but which contained hematurporphyrin and other related pigments. She developed more extensive neurologic and mental symptoms. A diagnosis of psychosis with hematurporphyrin was made. Her prognosis did not look good for a while but for the past few months she has shown marked improvement. She is clear mentally but still has some peripheral neuritis and

is continuing to gain back her weight. If she continues to improve she will soon be recommended for parole. This is a rare condition and is mentioned here for that reason.

One could go on and give reports of other cases in which either the mental condition develops as a part of another disease or in which there is a precipitation of what must have been a predisposition to mental illness. At the present time there is in the hospital such a case which clinically seems to be one of dementia praecox; the patient developed her abnormal mental condition during convalescence from pneumonia. This suggests another side of the subject at hand, namely, the hazard of mental illness developing in the convalescence from an acute illness. I refer to patients who seem to be well on their way to an excellent recovery but suddenly and unaccountably develop into chronic invalids. This, no doubt, is due in part in many cases, to the existence of health insurance. It therefore should be the physician's concern to pay attention to the psychic factors in somatic disease. It may be that preventive psychiatry could thus be practiced.

It has been my thought to point out two lines of thought in this paper. First, the psychiatrist in addition to practicing psychiatry must also practice internal medicine. Second, the internist or general practitioner should also be somewhat of a psychiatrist. A better understanding of the psychic side of patients, regardless of somatic conditions, will lead to better results. If the doctor closes his eyes to the mental side of his patients, they may fall into the hands of the quack, either the usual ones or the newer brand of those who practice psychologic medicine.

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## VALVULAR ENDOCARDITIS WITH PARADOXIC EMBOLI

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Mrs. B., twenty-five years of age, complained for several weeks of weakness, feverishness, shortness of breath and sharp stabbing pains in various parts of the body. She continued doing her routine house duties and neglected her symptoms until one day she had a miscarriage of a three months' pregnancy. Even then, she continued with her work although she was bleeding severely. After four days of such a course, she finally called a physician.

I found the patient exsanguinated and running a fever of 104 degrees. She was ordered to the

hospital immediately. Examination revealed the placenta lying almost loose in the vagina and it was removed with very little manipulation. On further examination, I found a rough systolic murmur audible over the entire precordium but was unable to determine its exact nature because of the rapid pulse of 170. Two successive blood cultures were positive for staphylococcus.

While in the hospital, the patient continued to complain of sudden pains almost everywhere. On one occasion she had such a pain in the left ankle and several days later fluctuation was noted at this point. An ounce of thick creamy pus was drained from an abscess opened at this point. At no time, however, were the embolic manifestations noted in the conjunctiva or finger tips.

The patient lived for twenty-four days during which time her temperature was septic in type, attaining a height of 108.4 degrees and usually not under 105 degrees. The four cardinal findings of an endocarditis were therefor present, i.e., fever, endocarditis, emboli, and bacteremia.

An autopsy was performed and examination revealed the uterus and lungs as well as the abdominal viscera studded with infarcts. Examination of the heart showed the valves of the left side to be perfectly normal but large vegetative masses were noted on the valve flaps of the right heart, thus substantiating our belief of the presence of an endocarditis.

The latter finding would account for the pulmonary emboli but would not explain the emboli lodged elsewhere. To account for the latter, one of two conditions had to be present: first, a patent ductus arteriosus acting as a shunt between the pulmonary and systemic aorta; this was not present; or second, a septal defect. A patent foramen ovale was found permitting the direct passage of blood from the pulmonary to the systemic side.

The case is of interest in demonstrating the mechanism of paradoxical emboli and also in suggesting the possibility that the miscarriage was due to an infarct of the uterus with consequent separation of the placenta and abortion.

The other possible explanation that must, of course, be considered, is that sepsis was the result of an induced abortion, although the patient absolutely denied this. The infection could then have been lodged and harbored in the heart valves, and subsequently caused the picture described. In view of the fact that suspicious symptoms were present previous to the miscarriage, I believe the former assumption is the more probable.

433 Frances Building.



# ACUTE METHEMOGLOBINEMIA FOLLOWING EXPOSURE TO META-DINITROBENZENE AND META-NITROANILINE\*

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It is very questionable that methemoglobinemia may follow the administration of drugs of the type of acetanilid.<sup>1</sup> That intense methemoglobinemia may result definitely in poisoning from nitrobenzene derivatives has been known for many years. The present report is of interest because of the quantitative data presented and the rather prompt improvement following glucose therapy.

## CASE REPORT

H. C., twenty-one years of age, male university student, was admitted to the University Hospital November 10, 1933, at 12:30 p. m. complaining of "weakness and sore eyes." The day before admission, at 5:15 p. m., he was preparing in alcoholic solution meta-nitroaniline from meta-dinitrobenzene. While refluxing this mixture it boiled over, caught on fire, and the hot solution spilled on both his arms and hands. He removed his shirt, but not his trousers, and a weak solution of soda and vaseline was applied to both arms. Three hours later he reported to the Student Health Department where his arms and hands were treated with picric acid solution and dry dressings applied. Following this he returned home and studied until 11:00 p. m. before removing his trousers. Several of his fellow students remarked that his face had a blue color. During the night he became nauseated. He attempted to go to the bathroom, fainted, remained unconscious

for several hours, and finally dragged himself to bed. The next morning he vomited several times and noted some palpitation. A physician was called who admitted him to the University Hospital.

Physical examination showed a well developed, well nourished white male having slight dyspnea. There was a slight aromatic odor to his breath. A peculiar dusky cyanosis of the skin was noted, most marked in the mucous membranes, lobes of the ears and nose. The head was negative except for the complaint of an aching sensation in his eyes. The conjunctivae were injected. The chest was negative. The heart was of normal size, rhythm was normal, no murmurs were heard, and the blood pressure was 130 systolic and 80 diastolic. The abdomen, rectum, extremities and nervous system were normal. The pulse was 130 per minute, respirations 20 per minute, and temperature 101 degrees. The hemoglobin was 15.4 gm.; red blood count, 4,430,000; white blood count, 15,300; differential count, 87 per cent polymorphonuclears, twelve per cent lymphocytes, one per cent monocytes, and one per cent reticulocytes. The urine was reddish brown nearly chocolate in color; specific gravity, 1.024; negative for sugar, albumin, blood (phenolphthalein reagent)<sup>2</sup> and microscopically. The Wassermann test was negative. The blood when drawn for the Wassermann test was a chocolate brown color. At 1:30 p. m. the blood had a concentration of 60 per cent methemoglobin.

The patient was placed at bed rest with forced fluids and oxygen by nasal catheter. At 4:00 p. m. he was given 1,000 c. c. of five per cent glucose in normal saline intravenously. The temperature rose to 102.2 degrees, but the pulse dropped to 120 per minute. The patient was

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## Chemical Findings in a Case of Acute Methemoglobinemia Following Exposure to Meta-dinitrobenzene and Meta-nitroaniline

Date	Per Cent Methemoglobin	Total Hemoglobin	Methemoglobin	Van den Bergh	Methemoglobin Spectrum	Iron in urine	Remarks
		gms.	gms.	mgm. %		mgm.	
11-10-33							
1:30 P. M.	60	15.4	9.24		++++		
4:30 P. M.	49						
10:30 P. M.	41	15.4	6.31		+++		
11-11							
6:00 A. M.						2.72	18 hr. specimen
8:30 A. M.	27	15.7	4.24		+		
10:30 A. M.				2.3 (biphasic)			
6:00 P. M.	16				?		
11-12							
6:00 A. M.						1.88	24 hr. specimen
7:00 P. M.	6	16.0	.96		—		
11-13							
11:30 A. M.	2	16.3	.32		—		

tired and slept most of the time. The methemoglobin had dropped to 49 per cent by 4:30 p. m. At 9:30 p. m. 1,000 c. c. of five per cent glucose in saline was again injected. At 10:30 p. m. the blood showed a concentration of 41 per cent methemoglobin. By 8:30 a. m. of the second day the methemoglobin had decreased to 27 per cent. At this time the cyanosis was much less marked, the temperature had become normal, the pulse was 90 per minute, respirations 18 per minute, and his eyes did not ache so much. The patient was given another 1,000 c. c. of five per cent glucose at 3:00 p. m. The methemoglobin at 6:00 p. m. was 16 per cent. The blood count showed red blood cells 4,870,000, and white blood cells 12,600. The patient rapidly improved and on the third day the methemoglobin had dropped to six per cent. Oxygen by nasal catheter was discontinued. On the fourth day the methemoglobin concentration was only two per cent. There was no visible cyanosis or discoloration of the skin. The patient was discharged.

#### DISCUSSION

The chemical findings are tabulated in the accompanying table. Methemoglobin was determined by the Clark and Gibson<sup>3</sup> bicolorimetric method which makes use of two color standards of carboxyhemoglobin and methemoglobin, while the blood specimen being examined may be composed of varying quantities of these two compounds; comparison is made in the Hasting's bicolorimeter. Total hemoglobin was calculated from the iron content of the blood.<sup>4</sup>

There was no doubt that the pigment in the blood of this patient was methemoglobin. Spectroscopically the blood gave an absorption band between the C and D lines in addition to the oxyhemoglobin bands between D and E. On treating the blood with ammoniacal sodium hydrosulphite, these bands disappeared, and were replaced by the single broad band of reduced hemoglobin between D and E. This in turn on treatment with carbon monoxide gave rise to the two characteristic bands of carboxyhemoglobin between D and E.

It is interesting to note that there was very little destruction of the hemoglobin in the blood which had been transformed to methemoglobin. Apparently practically all of the methemoglobin was reconverted to active hemoglobin. In evidence of this are the following findings. The total hemoglobin content of the blood was only slightly lowered, the plasma bilirubin<sup>5</sup> was only 2.3 milligrams on the second day, the iron output in the urine was only slightly above normal, and no methemoglobin was found in the urine. The basal metabolic rate was five per cent on the third day. The blood

nitrogen was normal on the second day: urea nitrogen, 12.6 milligrams, creatinine, 1.0 milligram; and uric acid, 4.2 milligrams. The reddish brown pigment in the urine was apparently an iron free porphyrin compound. Therapeutically we have regarded the intravenous injection of glucose as being directly beneficial in the treatment of methemoglobinemia. This opinion has been confirmed experimentally by Brooks.<sup>6</sup>

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## Case Report

### ICTERUS GRAVIS NEONATORUM

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At 9:30 p.m. on December 17, 1933, I saw a baby girl with Dr. Rice at the Iowa Methodist Hospital. Dr. Rice reported that the baby was full term, weighed seven and three-fourths pounds at birth and the color was normal. The only unusual condition noted at the time of birth was a peculiar yellowish amniotic fluid. There are two other older children living and well. When the babe was six hours old the skin color was changing to yellow, and when eighteen hours old was a deep yellow. When thirty hours old she had become relaxed, drowsy, would not eat and was deeply yellow colored. Examination at thirty-four hours of age revealed a markedly toxic infant with relaxed muscles, infrequent respirations, feeble heart tones, palpable liver and a combined cyanosis and jaundice color. Blood examination at this time showed a red blood count of 4,827,000 and nucleated red blood cells 112,000. The white blood count was 62,900. Bleeding and coagulation time were within normal limits. Blood platelets were normally present. The spinal fluid was of normal cell count and pressure. The Wassermann test was negative. The infant died at 11:45 p. m. at the age of thirty-six hours. Our diagnosis was icterus gravis neonatorum.

Other causes of icterus might be considered as physiologic jaundice, hemorrhagic disease, hemo-



lytic jaundice, syphilis, sepsis, and infection. However, this babe had a normal temperature, pulse and respiration. The cord was normal and there was no sign of infection or sepsis. The Wassermann reaction was negative on the spinal fluid. The bleeding and clotting time of the blood were found to be normal. There was normal meconium bowel movement. The jaundice was more rapid in onset and severe than physiologic icterus. The blood smear showed a nucleated red blood count of 112,100, typical of erythroblastosis fetalis, which we consider one form of icterus gravis.

The report of autopsy performed by Dr. Weingart at the Iowa Methodist Hospital morgue December 18, 1933, was as follows:

"The body is that of a thirty-six hour old infant. There is a marked jaundice of the skin. No deformities found. The anus is patent. The abdomen contains a moderate amount of bloody serum. The liver is markedly injected and extends six and one-half centimeters below the xyphoid and seven and one-half centimeters beyond the costal margin in the mid-axillary line on the right. The left lobe extends about five and one-half centimeters below the costal margin in the mid-axillary line on the left. The liver has a rather dark brownish color. The gallbladder appears normal. A canula is inserted in the gallbladder and the duodenum opened. Methylene blue solution is passed through the biliary channels. The liver weighs 248 grams (twice the normal weight) and presents a uniform surface, somewhat mahogany in color. No other changes. There is nothing special about the kidneys or adrenals. The pancreas show nothing abnormal. The spleen is somewhat injected, weighing 232 grams (twelve times the normal weight), fairly firm in texture. The Malpighian corpuscles are not particularly prominent. The lungs are somewhat congested. No other changes. The thymus is normal in size for the age."

The microscopic report was as follows:

"Sections of the liver show a most striking picture of extramedullary hemopoiesis. It is not the liver picture of a full term fetus, but rather the type of liver seen in a fetus three or four months of age. The liver sinusoids are filled with a variety of young red and white cells. There are a great number of various small cells with a small amount of cytoplasm, that superficially resemble lymphocytes, but which are in all probability erythroblasts. There are many larger cells which are probably myeloblasts, some myelocytes are seen, and an occasional megacaryocyte. There is some scattered brownish pigment in the liver cells. Sections stained with potassium ferrocyanide show no abnormal deposit of hemosiderin.

Sections of the spleen show considerable engorgement with blood and the reticulum is thought to be unduly prominent. No other very definite changes are seen. Sections of the pancreas and adrenals show no changes."

"*Diagnosis:* Icterus gravis neonatorum with erythroblastosis."

Infants may present at birth or shortly afterward evidence of a dysfunction of the hematopoietic system.<sup>1</sup> This condition seems to be unrelated to sepsis infection or hemorrhagic tendencies. It has a familial incidence, marked severity, and often a fatal termination. The outstanding symptoms are anemia, jaundice, enlargement of the liver and spleen, increase of nucleated red blood cells, and edema. When anemia is the presenting symptom the syndrome is known as congenital anemia. When a severe jaundice is present it is called icterus gravis neonatorum. When an enlarged liver and spleen are present, and an increase of erythroblasts accompany the anemia and a jaundice, it has been termed erythroblastosis fetalis. Finally when edema is added to the above syndrome it has been described as universal edema of the fetus.

These clinical entities have been recognized in the reverse order. Universal edema has been described in the medical literature for centuries<sup>2</sup> and <sup>3</sup>, icterus gravis<sup>4</sup>, and erythroblastosis since 1910, and congenital anemia<sup>5</sup> since 1919. Two very excellent case reports and discussions of these conditions were published by Diamond, Blackfan, and Baty<sup>1</sup> in 1932, and by Abt<sup>6</sup> in 1933. I have drawn the greater part of my information for this discussion from the above mentioned articles.

In the past few years great advances have been made in the knowledge of the growth and development of the hematopoietic system<sup>6</sup>. There are significant differences between the physiology and chemistry of the intra-uterine and extra-uterine life of the infant. Because of the difficulty of obtaining oxygen through placental membranes, the fetal circulation contains a greatly increased red blood cell and hemoglobin concentration. Often a newborn infant will show a red blood count of six to seven million and a hemoglobin over 100 per cent. To meet this demand extramedullary hematopoietic centers are present in the liver and spleen of the fetus. Extramedullary red blood forming centers are a typical fetal characteristic. This is seen in sections of these organs of the fetus, and is also evidenced by the presence of large numbers of nucleated red blood cells in the circulation of the newborn infant, particularly of those born prematurely. These fetal extramedullary red blood foci produce the fetal type or nucleated red blood cells<sup>7</sup>. After birth, oxygen

is so much more readily obtained by the circulating red blood cells that there is no longer a need for so great a concentration of these cells. A physiological hemolysis and destruction of the excess red blood cells takes place rapidly during the first few days of extra-uterine life.

The site of this red blood cell destruction must be in the blood stream, where hemoglobin is broken down to form bilirubin.<sup>8 and 9</sup> The liver cells do not secrete bilirubin but simply excrete or store the pigment. A physiologic jaundice may be produced by an over production of bilirubin above the ability of the liver cells to excrete it. Other conditions that might cause jaundice in the newborn infant are obstruction of the bile passages, or damaged or insufficient liver cells. In physiologic icterus the bile passages are not obstructed nor are the liver cells damaged as can be demonstrated by the fact that the bowel receives the pigment and the stools are colored by it to green or yellow. Furthermore the icterus is transient, passing away within a few days. It is only caused by an excessive amount of bilirubin in the blood stream. Jaundice caused by obstruction of the bile passages, as in congenital absence of bile ducts, is not transient but gradually deepening and the bowel movements contain no pigment. An insufficient liver may be capable of ridding the blood of a normal amount of bilirubin but such a liver would be unable to excrete the excess pigment produced during the first few days of extra-uterine life. A severe jaundice could thus develop soon after birth which might persist for weeks, gradually lessening as the load decreased.

In icterus gravis a damage of the epithelial cells of the liver has been found by all investigators. The microscopic section of the liver in this condition resembles that of a three to five months fetus. It is filled with extramedullary hematopoietic foci which crowd the liver cells and bile passages thus causing a dysfunction of both excretion and elimination. The liver becomes enlarged; the bile capillaries contain bile thrombi; bilirubin piles up in the blood stream; the kidney begins to excrete bile. These extramedullary hematopoietic foci produce enormous numbers of nucleated red blood cells, often as many as seventy-five to one hundred thousand per cubic millimeter. These nucleated red blood cells are more fragile than mature cells and are destroyed more rapidly after birth from the increased oxygen tension then present. This causes a sudden jaundice which probably adds to the red cell fragility and increases still further the hemolysis. Extremely rapid red cell destruction causes an anemia which cannot be met or corrected by the regular medullary hematopoietic system;

thus a severe anemia develops. Nucleated red cells carry less oxygen than mature cells, thus causing anoxemia. This may explain the occurrence of the enlargement of the placenta so often seen in this condition. The liver cell degeneration and necrosis noted around the central vein of the liver lobule may also be explained by this anoxemia. Other signs of this syndrome are yellow amniotic fluid and golden yellow vernix caseosa which are stained by bile in the fetal urine.

#### SUMMARY

The clinical syndrome of icterus gravis neonatorum may present the following symptoms: yellow stained amniotic fluid and vernix caseosa, enlargement of the placenta; jaundice, which may be present in a slight degree at birth, rapidly developing to a deep yellow during the first twenty-four hours; anemia; enlargement of the liver; and the presence of a large number of nucleated red blood cells in the circulation. The cry becomes feeble. The infant becomes drowsy, toxic, difficult or impossible to feed, flaccid and hypotonic. Occasionally petechiae are found, and death usually occurs within twenty-four to forty-eight hours. The literature contains reports of a few patients who recovered, with a severe anemia lasting for months. No treatment has been of avail in the severe cases. Those who survive the immediate toxemia and are left with the so-called congenital anemia respond to multiple small transfusions. The condition is due to a congenital undevelopment of the liver or embryonal persistence of the extramedullary hematopoietic red cell foci. The literature cites instances of the familial occurrence of icterus gravis, edema universalis of the fetus, congenital anemia, and erythroblastosis fetalis.

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## THE FINLEY HOSPITAL CLINICO- PATHOLOGIC CONFERENCES

### ACUTE FIBRINOPURULENT PERI- CARDITIS

F. P. McNAMARA, M.D., and TOM YOUNAN, B.A.,  
Dubuque

In a series of three hundred adult necropsies, twenty-one (7.0 per cent) showed lesions of the pericardium aside from "soldier patches". The majority of them were of secondary importance as regards the cause of death. However, there were three cases in which an acute fibrinopurulent pericarditis was an important factor in the fatal outcome. Since none of the lesions was definitely diagnosed clinically, the following case is reported in the hope of stimulating more intensive investigations of the pericardium on the part of clinicians.

#### CASE REPORT

The patient, a white man, twenty-six years of age, was admitted to The Finley Hospital, December 4, 1932, with a complaint of influenza and pneumonia.

*Past and family histories:* Unimportant.

*Present illness:* Ten days before admission the patient had influenza and was in bed for two days. After two days he returned to his work as a city fireman. Two days later he was drenched at a fire and in three days developed a severe pain in the right lower chest and upper abdomen. He vomited once. When first seen by his doctor a diagnosis of right lobar pneumonia was made. He was advised to enter the hospital at once, as he had become very cyanotic.

*Physical examination:* The examination confirmed the diagnosis of right lobar pneumonia. The heart was not enlarged and the sounds were normal though rapid. The blood pressure was 120/80. Otherwise the examination was essentially negative.

*Course in hospital:* The patient remained in the hospital one month. During the first five days his temperature fell from 105 to 102 degrees. It then became septic in type and fluctuated between 100 and 103.8 degrees for three weeks. The patient was very ill at all times. An x-ray examination during the third week showed fluid in the right chest; 150 c.c. of thick pus were withdrawn and a thoracotomy was performed one week before death, when 1,200 c.c. of pus were removed. Drainage from the chest was moderate but in spite of this the temperature continued high and was septic in type. The patient became more and more cyanotic and was irrational a large part of the

time. The pulse became more rapid and irregular, but there was no mention of the size of the heart. The patient died on the thirty-first day in the hospital.

*Final clinical diagnosis:* Right lobar pneumonia and empyema.

*Necropsy report:* At necropsy the essential findings were in the chest. Only a few cubic centimeters of purulent fluid were found in the right pleural cavity. The right lung was partly covered by a thin layer of fibrinous exudate which microscopically was undergoing organization. The left

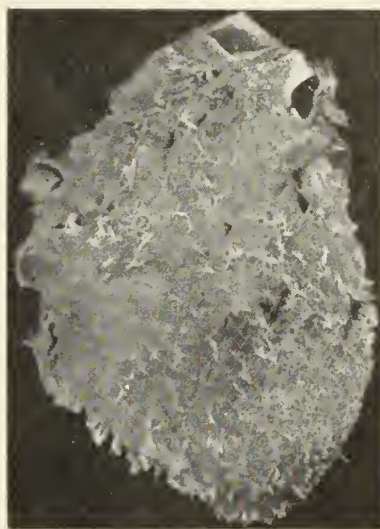


Fig. 1. Fibrinopurulent pericarditis

lung was unremarkable except for slight congestion and edema. The pericardial sac was greatly enlarged and contained 500 c.c. of fibrinopurulent exudate. The heart which weighed 350 grams was covered by a thick shaggy layer of fibrinous exudate (Fig. 1). On microscopic examination the exudate was found to be undergoing organization.

*Anatomic diagnosis:*

1. Right lobar pneumonia; purulent pleural effusion; operation (thoracotomy); organizing fibrinous pleurisy.

2. Acute and organizing fibrinopurulent pericarditis.

#### DISCUSSION

The following table lists the lesions of the pericardium in our series of three hundred adult necropsies. On study it will be obvious that in most instances the pericardial lesions were incidental to far more serious conditions. It will be equally obvious that in some of the cases correct diagnoses might have saved the patients' lives. Therefore a considerable part of the discussion will

be concerned with the diagnosis of acute pericarditis, probably the most important lesion of the pericardium.

*Diagnosis:* The first diagnostic point is to remember that pericarditis is both a clinical and pathologic entity. Even a cursory review of medical literature will show that too frequently it is forgotten as a possible diagnosis by clinicians. In the vast majority of cases the inflammation of the pericardium is secondary to some other infectious disease (pneumonia, empyema, cardiac infections, nephritis, septicemia, tuberculosis, et cetera). Therefore, the pericardium should be studied diligently during the course of such diseases.

The clinical diagnosis of pericarditis rests primarily upon a few characteristic signs and symptoms. The pericardial friction rub-sound, produced by the rubbing together of the roughened serous surfaces, is an outstanding sign. Some dysphagia, pain or indefinite precordial distress may be concomitant to the above finding. The friction rub-sound may be present for only a short time or it may be evanescent. An endocardial murmur may be mistaken for a pericardial friction rub-sound or vice versa. This error can be easily eliminated provided the examiner bears in mind the essential features of the former, namely, that it is heard loudest at one of the anatomic valvular

#### PRINCIPAL ANATOMIC DIAGNOSES

Total No. of Cases	Pericardial Lesions	Associated Lesions	No. of Cases	Clinical Diagnosis
1	Pericardial effusion	Bilateral pneumonia with acute pleurisy; chronic mitral endocarditis.	1	Chronic myocarditis; lobar pneumonia with pleural effusion.
7	Acute fibrinopurulent pericarditis	Coronary thrombosis with cardiac infarction.	2	1. Undetermined 2. Coronary thrombosis.
	"	Chronic glomerulonephritis	1	Chronic nephritis; endomyocarditis.
	"	Pneumonia and empyema.	2	Pneumonia and empyema.
	"	Multiple pneumonic abscesses with acute fibrinopurulent pleurisy.	1	Septicemia following peritonsillar abscess
	"	Recurrent carcinoma of colon and gangrene of leg.	1	Recurrent carcinoma of colon and gangrene of the right leg.
6	Fibrous pericarditis	Bronchiectasis, abscess of lung and arthritis.	1	Carcinoma or tuberculosis of lung; arthritis.
	"	Chronic mitral and aortic endocarditis.	1	Chronic endomyocarditis; chronic nephritis.
	"	Lobar pneumonia; mitral and aortic endocarditis.	1	Lobar pneumonia.
	"	Cirrhosis of liver; fibrous pleurisy.	1	Cirrhosis of liver.
	"	Chronic cholecystitis and cholelithiasis.	1	Chronic cholecystitis and cholelithiasis.
	"	Bilateral fibrous pleurisy; carcinoma of lung; coronary thrombosis and cardiac infarction.	1	Question of Hodgkin's disease.
4	Hemorrhage in pericardial sac.	Coronary thrombosis with cardiac rupture.	2	1. Coronary thrombosis and cardiac infarction. 2. Sudden death.
	"	Gunshot wound (suicide).	1	Gunshot wound.
	"	Stab wound (murder)	1	Stab wound.
3	Neoplastic invasion of pericardium.	Bronchogenic carcinoma with extension to the lung and pleura, pleural effusion.	1	Tuberculosis of lungs.
	"	Bronchogenic carcinoma with extension to the lung and pleura, pleural effusion.	1	Bronchogenic carcinoma with pleural effusion.
	"	Composite tumor of the kidney with bilateral pulmonary metastases.	1	Composite tumor of kidney with bronchopneumonia.



areas, that it is in temporal rhythm with a particular phase of the cardiac cycle, systole or diastole, that it is frequently propagated beyond the area of the precordium and that it is less likely to vary in its rhythm, location and character from day to day. On the other hand a friction rub-sound may be outstanding at one moment, completely disappear at the next, only to reappear later. A pleural friction rub-sound should offer no difficulty in being distinguished from a pericardial rub as the former is synchronous with respirations and ceases as the patient purposely goes into a state of apnea.

Pericarditis may be followed by or associated with pericardial effusion in which case it may be difficult or impossible to elicit the cardinal sign (friction rub-sound) depending upon the degree of effusion. With adequate study the diagnosis of pericardial effusion should present no obstacles, since its onset and presence is betrayed by the following all important features of this condition:

1. Widening of the area of cardiac dullness.
2. Abrupt transition from pulmonary resonance to cardiac flatness.
3. Widening of the cardiac dullness in the second intercostal space.

An x-ray examination may also demonstrate enlargement of the pericardial sac. The electrocardiographic findings have proved to be indefinite and uncertain with regard to pericardial involvement. Finally it should be emphasized that lesions of the pericardium will be diagnosed only by persistent, adequate, and repeated physical examinations of the pericardium.

*Treatment:* As pericarditis is usually preceded by some other infectious disease the treatment will be secondary and mainly symptomatic. Absolute rest of body and mind as well as a nourishing, easily digested diet are essential. Sedatives are indicated in cases when discomfort and pain become annoying factors. In cases of pericarditis with slight effusion an expectant plan of treatment is advisable. However, if the effusion is large enough to produce serious cardiac impairment and if it persists after the various means of medication and dehydration have been attempted then paracentesis pericardii is indicated and should be performed. In cases of pyopericardium, pericardotomy should be done. The pericardial sac is exposed by the removal of an inch or more of the cartilage of the fourth rib on the left side. After aspiration in order to determine the character of the pericardial fluid, the sac should be opened and irrigated to remove all the exudate possible. The wound should be closed with provision for adequate drainage. It should be emphasized that during the operation all insults to the heart should be avoided. The prognosis will depend largely upon the sever-

ity of the primary infection, an early diagnosis of the pericarditis, and the efficiency of the treatment.

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#### FOOD AND DRUG RESEARCH EXPANDED TO STUDY VITAMINS AND PHARMACOLOGY

Two new units, a Vitamin Division and a Pharmacologic Division, have just been organized in the Food and Drug Administration.

Manufacturers and advertisers have not been slow to capitalize on the popular appeal of the vitamins, and the market has been flooded with many products of doubtful value, in addition to many of questioned importance from a nutritive standpoint. The testing of vitamins must usually be carried on through animal experimentation and the tests are long and tedious. These several facts entirely justify the establishment of the new Vitamin Division, whose function will be to check the claims and help establish standards for foods and drugs for which claims of vitamin potency are made.

The Food and Drug Administration has been handicapped in the enforcement of the Federal Food and Drug Act, insofar as certain pharmacologic preparations are concerned, due to the fact that many of these products require a biologic assay to determine their usefulness and to establish any danger incident to their use. This is particularly true of the very large group of glandular products now offered for sale. In establishing these new divisions, the Food and Drug Administration is preparing to face its obligation in the further protection of the public against useless or harmful drugs.

#### NEW REGULATIONS FOR FEDERAL EMPLOYEES' COMPENSATION CASES

Word comes from the offices of the American Medical Association regarding new regulations which have been promulgated for the care of injured employees of federal works projects.

"The Emergency Relief Appropriation Act of 1935 provides that the provisions of the Federal Employees' Compensation Act are extended, as far as applicable, to employees of the Federal Civil Works Administration for disability or death resulting from traumatic injury sustained while in the performance of duty. The administration of the Federal Employees' Compensation Act is vested in the United States Employees Compensation Commission, Washington, D. C., the commission being authorized to make necessary rules and regulations for the carrying out of the purposes of the act. Pursuant to this authority, the commission, July 15, 1935, promulgated Rules and Regulations No. 1, Governing Compensation and Medical Expense for Works Progress Administration." Those interested may secure copies of these rules and regulations by writing to the State Medical Society office.

# STATE DEPARTMENT OF HEALTH

*Walter L. Biering*

## WATCH FOR POLIOMYELITIS

News dispatches tell how health workers in North Carolina and Virginia are at the present time fighting to check an outbreak of infantile paralysis. Reports indicate that that disease is unduly prevalent in parts of California as well. Is poliomyelitis or infantile paralysis likely to reach epidemic proportions in Iowa during the next several weeks? That is a difficult question to answer accurately. Iowa is located in the west north central states. Other states in that section of the country include Minnesota, Missouri, North Dakota, South Dakota, Nebraska and Kansas.

### *Position of Area:*

During the first twenty-eight weeks of 1935, that is, up to and including July 13, the number of cases of poliomyelitis reported in the west north central states has been below the median endemic index\* on eleven occasions, has exceeded it the same number of times and has equalled it during six of the weeks of that period. Further, during the period from May 4 to July 13, 1935, inclusive, the number of cases of poliomyelitis reported during any given week has been above its weekly median endemic index only once during that ten-week period. For those reasons, an undue prevalence of that disease in the west north central section of the country during the remaining summer and fall months does not now appear likely.

### *During Warm Months:*

It does not follow, however, that cases of the disease will not occur in Iowa. Infantile paralysis is usually most prevalent during the warm months of the year. On the basis of the records of the last five years, the department expects to receive during the remaining twenty-three weeks of the year reports of not less than fifty-three cases. The highest total of cases for any given week is likely to be reported during the first week of September,

but should the incidence of the disease rise above the median endemic index level, the peak may not occur until the first week in October. No outbreak of poliomyelitis has occurred in Iowa since 1931. During the first twenty-nine weeks of 1935, the incidence of the disease has been above the median endemic index on eight occasions and has been below it only one time. During the period 1930 to 1934 inclusive, reported cases were above the median endemic index level prior to the twenty-ninth week, as many as eight times only during 1931. Subsequent to the twenty-ninth week of 1931, an outbreak of the disease of moderate proportion occurred.

## DATA FROM UNDULANT FEVER RECORDS IN IOWA

Various aspects of undulant fever in Iowa are being continually studied. During the biennium ending June 30, 1934, the State Hygienic Laboratories at Iowa City reported 581 positive agglutination tests on serum specimens. This number represented an increase of 36 per cent over the 428 positive agglutination reports of the preceding biennium ending June 30, 1932. Information contained in the following paragraphs is based largely upon 272 undulant fever case records completed by attending physicians and returned to the State Department of Health. These records cover a period of two and one-half years, from January 1, 1933, to July 1, 1935.

### *Age and Sex Distribution of Cases:*

Among 266 records giving the desired information, 192 or 72 per cent represented male patients and 74 or 28 per cent, females. In the series under consideration, there was but one case (female) in the group from one to four years of age. No cases occurred in infants under one year of age. Most of the cases in both sexes involved the groups from twenty to forty-nine years of age. Of the males, 140 or 72 per cent of the 192 cases were in these age groups. Seventeen patients were in the group from 60 to 79 years of age; of these eight were men and nine women.

\*The median endemic index is obtained by arranging data (for instance the number of cases of poliomyelitis reported during the same week, day, or month, during a period of years) in arithmetic sequence and selecting the middle number. For example, if during a five-year period the numbers are 2, 4, 6, 7 and 10, then 6, the middle number is the median endemic index.



Distribution of Cases by Occupation:

1. Rural Group. Among 125 cases related to rural areas, 91 were men engaged in farm work, 20 were farmwives and 14 included livestock dealers and rural school children. There were no cases of undulant fever among veterinarians.
2. Urban Group. Among 146 cases occurring in urban centers, 46 belonged to the tradesmen—professional group, 41 were packing house employees, 30 were housewives and 24 were school children. Five cases occurred in patients or inmates of state or county institutions.

Contact with Animals:

1. Rural Group. Seventy-one of the 272 records mention contact with cows in milking and 20 through removal of the placenta. One farmer had contact with beef in butchering. Fifty-seven patients were mentioned as having contact with hogs through butchering. Other special types of contact with hogs and the number of records mentioning such contact were as follows: handling little pigs, 45; marketing, 38; ringing, 36; and castrating, 36. In addition, sixteen of the records mention contact with sheep or goats, and seventeen mention contact with horses. Five records refer to contact with chickens, and two with dogs.
2. Urban Group. In the tradesmen-merchant-professional group, 80 per cent had no contact with animals; of the housewives, 68 per cent gave a history of no contact with animals. Nearly 90 per cent of the patients of school age were in the no-contact group. On the other hand, in the group of 41 patients who were packing house employees, 76 per cent had contact with hogs, cows or with both species of animals. The records mention contact with other animals as follows: dogs, six; sheep or goats, two; horses, two; chickens, one; and cats, one.

Use of Dairy Products in the Urban Group:

Among thirty patients who were employed in packing houses, 77 per cent used pasteurized milk prior to onset of illness, and 23 per cent used raw milk. Among 95 patients, including the tradesmen-merchant-professional group, housewives and school children, 88 per cent used raw milk and 12 per cent pasteurized milk.

Probable Source of Infection:

In urban or rural cases in which there has been freedom from contact with domestic animals, it is assumed that infection followed the use of raw dairy products from infected animals. In groups having contact with animals, particularly hogs and cows, entrance of brucella organisms through the skin appears to be a factor far outweighing in importance that of ingestion. In order to establish

without doubt the source of infection in cases of undulant fever, it is necessary to have laboratory evidence relative to the nature of infection in patients and in the animals concerned. Such evidence is obtainable through blood cultures and through reports of agglutination tests on suspected animals.

1. Blood Cultures. I. H. Borts, M.D., bacteriologist, State Hygienic Laboratories, reports successful isolation of brucella in twenty-six instances during the period January 1, 1933, to July 1, 1935. Among the twenty-six positive blood cultures, twenty yielded organisms of porcine variety (*Brucella suis*) and six of bovine type (*Brucella abortus*). It is desirable that blood cultures from undulant fever patients who are febrile be forwarded to the laboratory whenever possible. Identification of the type of organism concerned aids greatly in establishing the probable source as well as manner of infection.
2. Agglutination Testing of Animals. Through cooperation with J. A. Barger, D.V.M., Chief Inspector, Bureau of Animal Industry, United States Court House, Des Moines, arrangements may be made for the testing of cows and hogs concerned in undulant fever cases, for evidence of infectious abortion. This work is essential in the program of eradication of disease from livestock. Reports of agglutination tests on animals also throw much light upon the sources of human infections.

Brucellin in Therapy:

Brucellin, a culture filtrate of brucella organisms, is available on request from the State Hygienic Laboratories. Cases of undulant fever in Iowa offer an unusual opportunity for determining the value of brucellin in therapy.

Undulant Fever Case Records:

Continued cooperation of attending physicians is desired in forwarding information relative to the various items on the case record form. Such information will contribute significantly to the knowledge of undulant fever and to the solution of problems presented by this disease.

PREVALENCE OF DISEASE				
	June '35	May '35	June '34	Most Cases Reported From
Diphtheria .....	30	40	34	Polk
Scarlet Fever .....	232	355	139	Dubuque, Black Hawk
Typhoid Fever .....	3	6	5	Des Moines, Marion, Polk
Smallpox .....	30	21	3	Warren, Page, Woodbury
Measles .....	479	1,688	679	Polk, Cerro Gordo
Whooping Cough ..	82	60	141	Dubuque, Woodbury
Cerebrospinal Meningitis .....	7	12	4	Polk, Woodbury
Chickenpox .....	176	347	123	Boone, Polk
Mumps .....	462	1,050	94	Polk
Poliomyelitis .....	0	3	1	
Rocky Mountain Spotted Fever....	1	0	1	Linn
Tuberculosis .....	52	77	39	(For State)
Undulant Fever....	9	13	7	(For State)
Syphilis .....	153	143	121	(For State)
Gonorrhea .....	146	152	161	(For State)

# The JOURNAL of the Iowa State Medical Society

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## THE INTEGRATION OF THE MEDICAL PROFESSION

Due, apparently, to an attitude of indifference in the already established legal associations and societies, it has been considered desirable in some states to organize, as a corporation, all lawyers admitted to practice in that state. More recently, in the state of Oklahoma, the dental profession has perfected a similar corporation. At the last annual session of the American Medical Association, the Board of Trustees in its annual report brought before the House of Delegates the problem of state medical corporations.

In this report they state that "the Board of Trustees has been advised that at least two states have had under consideration, and that one still has under consideration, the matter of the reorganization of the medical profession along lines similar to those that are being followed in a number of states for the reorganization of the legal profession—namely, by a process of what is known as 'integration' ". They explain that, under this process of integration, every physician, by virtue of his status as a licensed practitioner, automatically becomes a member of the corporation, entitled to vote in its management. By the same token, every physician licensed to practice in the state is required to contribute to the expense of the corporation. The corporation, in turn, is invested with authority to pass upon the qualifications of any person seeking a license to practice in the state, to supervise the professional activities of all licensed physicians, and administer discipline in cases of misconduct when such an action appears required. Expulsion from the corporation would automatically revoke the physician's license to practice medicine. "It will be seen that under this system the profession is organized into a guild, as it were, and controls its own affairs, except that

it has no right to pick and choose its members, if they are morally and professionally qualified". Such a corporation would completely take over the function of a medical licensing and examining board and, to a large extent, those of the state medical society. In states where the licensed practitioners are indifferent in their support of their state medical society and the financial burden rests heavily upon the limited society membership, this plan of integration provides for an equal and complete division of organizational costs. Since it would represent, one hundred per cent, the licensed practitioners of the state, it insures complete democracy. No doubt, through a properly selected committee or board, a group qualified for the examining and licensing of new practitioners could be readily secured.

The program of integration makes no provision for scientific development, and we presume that the function of scientific education, now considered a major function of the state medical society, would be taken over by other organized groups or delegated solely to the county medical society. It seems unlikely that the physicians of the state would wish to maintain this public corporation through dues or assessments and, at the same time, maintain a state medical society, also supported through dues or assessments. In our opinion, the educational loss through such a program constitutes one of the major disadvantages of the scheme. This thought is intimated in the report of the Reference Committee, which states "The disadvantage of integration lies in the fact that the average member of the corporation would be less likely to have a professional interest in its ethical, social and scientific activities than does the average member of such voluntary organizations as exist today".

A second serious disadvantage to the scheme was also discussed in the report of the Reference Committee. This has to do with the problem of the osteopath, the chiropractor, the naturopath and other cultists who, apparently, would not be included in this plan of integration. The independent integration of these various healing cults would produce a multiplicity of corporations without centralization, standardization or control. The protection of standardizing legislation, such as the basic science law, would be lost. A democratic organization, including all of these various cults together with the medical practitioners, would in many instances be equally chaotic, and standards would likely be established for the accommodation of the more inferior of the group. The Reference Committee wisely recommended additional study of the plan by the Trustees of the national society and an additional report at the next annual session.



In Iowa, where over eighty-five per cent of the licensed practitioners heartily endorse, subscribe to and support a state medical society, and where a satisfactory examining and licensing board exists, and where the public is protected by a basic science law, it would seem that the plan of integration is wholly unnecessary, or at least inadvisable. Perhaps, however, judgment should be withheld until we possess a fuller knowledge of the plan and its implications.

#### PHYSICIANS ORGANIZED FOR ECONOMIC PROTECTION

A recent announcement from New York state reports the organization of an association by New York physicians for their economic protection. The organization is known as the Physicians Equity Association of America, Incorporated, with elaborate offices at 745 Fifth Avenue. A subsidiary but associated organization is known as the Physicians Credit Union, "a cooperative bank under state supervision for the exclusive use of doctors to deposit in and borrow from." The announcement states that the Physicians Equity Association of America, Incorporated, has sponsored a benefit theatrical performance in Radio City and a series of social events headed by a luncheon for prominent society women at the Hotel Lexington on Friday, May 10. These affairs will be followed by other social events of a similar character, and it is the hope of the sponsors that sufficient funds will be raised through these channels to conduct a membership drive among the thirteen thousand physicians of New York state and later among the 156,000 physicians throughout the nation. Membership in the association is listed at \$3.00. Dr. Robert Emmett Walsh of New York, president of the Physicians Equity Association, states that "prominent among the aims of the organization are:

"1. The elimination of free clinical service for patients who can afford to pay for more exact medical attention.

"2. The assurance of reasonable compensation to the physician for every professional service rendered.

"3. The introduction of bills into state legislatures to correct abuses now rampant in the practice and regulation of medical, surgical, and other conditions affecting public health.

"4. The opposing of such legislation as tends to legalize the irregular practitioner.

"5. The protection of the public by removing from the profession all unqualified healers.

"6. The creation, on both sides, of a clearer economic situation between the patient and the doctor."

It is planned to include in the membership "all recognized dentists, osteopaths, and a number of other specialized groups of physicians." Little or no attention would have been given an announcement of the Physicians Equity Association of America were it not for the fact that this organization claimed to include in its membership Dr. Franklin Welker, president of the New York County Medical Society, Dr. John A. Hartwell, ex-president of the New York County Medical Society, Dr. Daniel Dougherty, secretary of the New York County Medical Society, and Dr. Samuel Kopetsky, editor of the New York State Journal of Medicine, and because its president issued the following statement—"The Physicians Equity, working with county medical societies, is endeavoring to maintain direct connections with Albany."

These citations in the announcement were evidently intended to give the organization caste, since without this sponsorship it would scarcely receive serious attention. Perhaps physicians in the agricultural belt of the middle west are not in a position to appreciate the problems of the eastern physicians, particularly those practicing in the larger cities and in crowded communities. Perhaps the physicians of New York state need a Physicians Equity Association for their economic protection. Perhaps a Physicians Credit Union will serve their banking needs better than the established financial institution. Certainly, in Iowa there is little or no need for such an incorporated association. In fact, the whole idea seems contrary to the principles of medical ethics and superfluous for economic security.

We believe that the spirit of altruism, which has for all times been one of the cherished ideals of the medical profession, may be carried to an economic absurdity. Still, it would seem to us that the avenues of organized medicine, as already established, should be and are sufficient for working out those plans of economic security required by the changing times. We believe that the physician should receive remuneration for his services whenever and wherever his services are required. We believe that the care of the indigent is a responsibility of the tax paying public and not one solely of the medical profession. We believe that the patient who is able to pay a hospital bill should not be an object of charity for professional care. We believe that industrial surgery, obtained on a competitive basis, frequently works a direct hardship on the general practitioner. We believe that with the changing social order the distribution of medical service requires modification and adjustment. We maintain, however, that medical care is only one of the necessities of life

and that its adjustment is inseparable from that of other necessities. The sneering challenge of a "medical trust" has in the past been made by the foes of medical practice wholly without foundation. Physicians themselves have been openly critical of our English colleagues who recently perfected a medical union, having all the essential earmarks of a trade or labor union. Should the Physicians Equity Association of America prosper, it would appear that we must accept without challenge the accusation of fostering a medical trust, and acknowledge that we have out-stepped our British colleagues in unionism.

#### A NEW SERIES OF SPECIAL ARTICLES

We are pleased to announce that the faculty of the College of Medicine of the State University has accepted our invitation to supply the JOURNAL with a series of short, timely reports primarily intended to interest the general practitioner. Our readers will recall that during the years 1930 and 1931 we published a series of such articles taken from the records of the University Hospitals. The favorable comment which we received concerning these articles assures us that this new series will meet with general approval. The new series of articles will begin in the September issue, and we hope to be able to publish each month the title of the article for the succeeding month. This program of postgraduate education is entirely in keeping with the policy of the faculty of the College of Medicine in attempting to elevate the standards of medical practice throughout the state of Iowa.

"The continuation and postgraduate training of physicians is a vital part of an adequate program of medical service for the country, to which the universities and medical profession should devote more attention." This quotation is taken from the final report of the Commission on Medical Education of the Association of American Medical Colleges. They further observe "The quality of medical service depends largely upon the extent to which physicians keep abreast of new knowledge and methods for the diagnosis, treatment and prevention of diseases".

#### MEDICAL PUBLISHERS CELEBRATE 150TH ANNIVERSARY

America, as a new country, has developed very few traditions in business. It is, therefore, noteworthy to observe that Lea and Febiger, medical publishers of distinction, were established in 1785, antedating the constitution of the United States by four years. Since then it has been in continuous operation in the same family, one member of the present firm being of the fifth generation in descent from the founder, Mathew Carey.

Commemorating this anniversary Lea and Febiger

have published a very unique and interesting booklet entitled, "One Hundred and Fifty Years of Publishing" in which the tradition of Lea and Febiger is traced from its modest beginning on the four hundred dollars lent by LaFayette to Carey in 1784 down to the present day when the firm ranks among the most successful in this field.

Outstanding of the company's publications are, Gray's Anatomy, accepted as standard since 1859, and the American Journal of Medical Sciences, now in its one hundred and fifteenth year of continuous publication. It is interesting to note that this journal was originally established in 1820 as the Philadelphia Journal of the Medical and Physical Sciences, being edited by a Dr. Nathaniel Chapman who was also in 1847 the first president of the American Medical Association.

While a tradition of one hundred and fifty years might suffer by comparison with business traditions of the continent in this comparatively new country, one hundred and fifty years of continuous service must be reckoned as outstanding and truly significant of faithful service.

#### DRUG CASES BRING HIGH FINES

The Food and Drug Administration reports that prosecutions for violations of the Federal Food and Drugs Act, during one recent month, brought fines aggregating \$2,644. The highest fine was \$1,000, assessed against T. M. Sayman, self-styled herb doctor, who made a fortune commercializing a common plant of the American southwest, called the "soaproot" or "Spanish bayonet." "Doctor" Sayman, whose business was a combination of mail order and local concessionary salesmen, paid the entire fine in one and two dollar bills.

The T. M. Sayman Products Co., St. Louis, Mo., of which "Doctor" Sayman is practically the sole owner, had shipped in interstate commerce products known as "Sayman's Healing Salve," "Sayman's Vegetable Wonder Soap" and "Sayman's Liniment." The salve, composed of camphorated petroleum jelly, zinc oxide and boric acid, was offered as a treatment for eczema and other skin diseases, chronic old sores, and ulcers of the nose, throat, lungs and stomach. The soap, a vegetable oil soap, was to be used with the salve in its external uses. The liniment was a mixture of red pepper extract, camphor, sassafras oil, chloroform, alcohol and water, but the label claimed it to be a remedy for rheumatism, kidney diseases, pleurisy, tuberculosis, grippe, toothache, croup, cramps, hay fever, earache, deafness, ulcers, snake bite, horse colic and whooping cough. All these claims, the government alleged were false and fraudulent and therefore in violation of the Food and Drugs Act. Sayman did not contest the government's findings and allegations. In the early part of his career, Sayman conducted a traveling medicine show. With the growth of his business, he came under the scrutiny of officials in Washington, and was fined \$50 in 1915 and \$40 in 1917, and several lots of his "Wonder Herbs" were seized and destroyed in 1924.



# SPEAKERS BUREAU ACTIVITIES

## POSTGRADUATE COURSES

The Speakers Bureau Committee met in Iowa City on Sunday, July 7, with Dr. E. M. MacEwen, dean of the State University of Iowa, College of Medicine, and discussed the problems of postgraduate courses for this fall. It was decided to present courses by districts for the coming year, making each one as large in size, and as excellent in subject matter, as was possible. Dr. MacEwen stated that the University would be very glad to cooperate as it always had, and offered to assist the Bureau by putting on two courses and by helping with the others. The result to date of this planning is as follows:

### DAVENPORT

The Scott County Medical Society has asked for a course in General Therapeutics, and has said that it would endeavor to have an enrollment of over one hundred men. The meetings will start about September 15, with a two hour lecture, and will continue for ten weeks. Subjects to be covered are:

1. Modern Treatment of Anemia
2. Treatment of Hypertension
3. Treatment of Gastro-intestinal Disorders
4. Diagnosis and Treatment of Common Skin Disorders.
5. Treatment of Diseases of the Gallbladder
6. Diagnosis and Treatment of Neuroses
7. Immunologic Therapy
8. Treatment of Infections of the Genito-urinary Tract
9. Recent Advances in Therapeutics
10. Surgical Treatment of Diseases of the Lungs and Pleura

Any physician in the vicinity of Davenport who is interested in this course should write to Henry A. Meyers, secretary of the Scott County Medical Society. It is a most valuable course for every practitioner.

### NEWTON

The Jasper County Medical Society is going to hold a course on Cancer at Newton, starting about September 15, and has guaranteed an enrollment of one hundred members. The fees from that enrollment make it possible to obtain the very best clinicians from various parts of the country, and this course should be one of the most valuable on cancer ever presented anywhere. The following subjects will be covered:

1. The Present Status of Cancer Knowledge
2. The Morbid Anatomy and Physiology of Malignant Tumors
3. Cancer of the Skin: Diagnosis and Treatment
4. Malignant Tumors of the Head and Neck: Diagnosis and Treatment
5. Malignant Neoplasms of the Nervous System: Diagnosis and Treatment

6. Malignant Tumors of Mesenchymal Tissue: Diagnosis and Treatment
7. Cancer of Gastro-intestinal Tract: Diagnosis and Treatment
8. Malignant Tumors of Reproduction Tissue in the Male and Female
9. Surgical Diagnosis and Treatment of Cancer
10. Evaluation of Radiologic Diagnosis and Treatment

All physicians within driving distance of Newton should make an effort to attend this course, as it is something which has never before been offered, and it will be very thorough in covering the subject. Such an opportunity should not be overlooked.

### OTHER COURSES

Various other courses are being planned and will be announced later. Cards will be mailed to the different districts with information relative to nearby courses. It is to be hoped that the enrollment this fall will exceed all previous figures, since the subjects offered are of exceptional interest and will be given in such a way as to present a great deal of valuable information.

## LAY MEETINGS

During the month of July, letters were sent out by the Speakers Bureau to all service clubs in the state, all Chambers of Commerce, all Woman's Clubs and Parent-Teachers Associations, offering the services of the Bureau in supplying speakers on various subjects relating to health. A great many replies have been received, and several talks requested. Speakers have been obtained for these requests, and this work will continue throughout the year. The Bureau furnishes these speakers without cost to the organization, and is always glad to have requests. Any organization desiring such a talk may obtain a speaker by writing to the Bureau.

## RADIO SCHEDULE

WOI, Wednesdays, at 5:30 P. M.

WSUI, Mondays, at 8:00 P. M.

- August 7—Vacations and Health.  
Erwin Schenk, M. D.
- August 14—The Infant in Summer.  
Walter A. Anneberg, M.D.
- August 21—Is Your Child Ready for School?  
George H. Keeney, M.D.
- August 28—Allergy.  
Julia Cole, M.D.

# WOMAN'S AUXILIARY NEWS

*Edited by the Press and Publicity Committee*

MRS. DEAN W. HARMAN, *Chairman*, Glenwood, Iowa

## MESSAGE FROM THE STATE PRESIDENT

Due to the unusual circumstances in which I came into office it was impossible to outline the proposed activities for the year, appoint state chairmen, and hold postconvention board meetings as per the customary routine at the state convention. Therefore, through the medium of the Journal Auxiliary Page, I extend greetings to all County Auxiliary members and Auxiliary members at large, and invite you to join with the board and chairmen in making this a truly beneficial Auxiliary year.

To accomplish this I believe it paramount that we have an approved plan that may be used partially or in its entirety by all county units whose medical societies see fit to approve. Many county units have definitely expressed their wishes for such a plan. It is with this in mind that the past six weeks have been occupied in compiling and eliminating materials from programs used throughout the nation.

Specific educational programs for counties meeting quarterly as well as for those meeting monthly will be supplied. Very definite public relations activities will be outlined, and it is hoped they can be enlarged upon as the year advances. The Speakers Bureau has asked for our support. This is an approved activity, and it is hoped that every Auxiliary will have the placing of several speakers to their credit this year.

I am a firm believer in an Auxiliary with a purpose other than social. I wish to remind you that the state society is dependent upon the county units. The state cannot succeed unless the county organizations seriously assume and conscientiously discharge their responsibility. Every county president should make a systematic search for the material best suited to her needs in program planning, and should find a definite public relations program. As your leader for the year 1935-1936 I shall be most anxious to help at all times. I am sure you will find the chairmen of all divisions ready to inspire. A lively correspondence with the president and departmental heads is encouraged at all times.

May this be our activity year! Cooperation will make this possible.

Mrs. M. C. Hennessy.

## PROGRAM SUGGESTIONS

With the coming of September, most women's organizations resume their year's work and commence their programs. As a source of material for women's

clubs and parent-teachers associations, the various members of the Woman's Auxiliary to the Iowa State Medical Society are urged whenever possible to suggest to the program committees that at least one program each year be presented by a speaker from the Speakers Bureau of The Iowa State Medical Society. These speakers may be secured by writing to the Bureau and without expense to the local lay organization presenting the speaker.

A number of interesting and educational talks have been arranged. Some of the subjects are:

### Women's Clubs

Acute Contagious Diseases.  
Infectious Diseases and Their Prevention.  
Your Heart and Mine.  
Psychoanalysis.  
Cancer.  
Making Motherhood Safe for Mothers.  
Health Problems of Childhood.  
Tuberculosis and the Community.  
Mental Hygiene.  
Eugenics.  
Diet Fads.  
Periodic Health Examinations.  
Achievements of Modern Medicine.  
Guarding the Health of Your Child.  
Social Hygiene.  
Menace of Rheumatism.  
Living at One's Best.  
Heredity.  
Health and Happiness.

### Parent-Teachers Associations

Social Hygiene.  
Appendicitis and What Parents Should Know About It.  
The Physical and Mental Health of the School Child.  
Tuberculin Testing Program.  
Preparing Your Child for the Public School.  
Your Children's Eyes.  
Summer Round-Up.  
True Health Standards for the Child.  
Preventing the Diseases of Childhood.  
Deafness in Children.  
Nose and Throat Disorders.  
Heart Trouble.  
Mental Hygiene.  
Surely we should take advantage of this splendid opportunity to serve the communities.



## SOCIETY PROCEEDINGS

### Buchanan County

The regular quarterly meeting of the Buchanan County Medical Society was held at the Wapsipinicon Golf Club, Thursday, July 18. Despite the warm weather, twenty-five golfers played and turned in some low scores. Dr. W. J. Neuzil of Cedar Rapids and Dr. C. W. Ellyson of Waterloo tied for low score; Dr. Ellyson drew the lucky number and was awarded first prize.

Dinner was served to sixty-seven doctors at the club house at seven o'clock. The scientific program was furnished by two speakers from the Mayo Clinic, Rochester. Joseph Mayo, M.D., read a paper on Hyperinsulinism, and Hugh Cabot, M.D., addressed the group on Tuberculosis of the Genito-urinary Tract. He dealt with the subject in a very masterful manner from every angle. A series of lantern slides supplemented the address. Discussions of the papers were given by Drs. F. Harold Entz of Waterloo; Nathaniel G. Alcock of Iowa City; and Jennings Crawford of Cedar Rapids.

The next quarterly meeting will be held at the Independence State Hospital.

Nelson L. Hersey, M.D., Secretary

### Dallas-Guthrie Society

Members of the Dallas-Guthrie Medical Society met at the Perry Golf and Country Club on Tuesday, July 30, for a twelve-thirty luncheon, after which the following program was presented: Diagnosis of Carcinoma of the Stomach, John T. Strawn, M.D., of Des Moines; and Differential Diagnosis of Acute Conditions of the Upper Abdomen, K. W. Diddy, M.D., of Perry.

### Dickinson-Emmet Society

A joint meeting of the Dickinson and Emmet County Medical Societies was held Thursday, July 18, at the Gardston Hotel in Estherville. After a dinner meeting, the following speakers presented the scientific program: Aplastic Anemia, O. H. Miller, M.D., of Estherville; discussion by G. H. West, M.D., of Armstrong; Purpura, E. E. Lashbrook, M.D., of Estherville; discussion by L. W. Loving, M.D., of Estherville; and Hemophilia, W. E. Bullock, M.D., of Lake Park; discussion by Andrew I. Reed, M.D., of Estherville.

### Floyd County

James B. Carey, M.D., of Minneapolis, was guest speaker for the Floyd County Medical Society, at a meeting held in Charles City, Tuesday, July 23. Dr. Carey spoke on The Anemias.

### O'Brien County

A special meeting of the O'Brien County Medical Society was held Tuesday, July 9, at the court house in Primghar. One of the features of the meeting was the report of the delegate to the recent annual session of the Iowa State Medical Society, given by Dr. W. R. Brock of Sheldon.

### Austin Flint-Cedar Valley Medical Society

The summer meeting of the Austin Flint-Cedar Valley Medical Society was held Tuesday, July 9, in Mason City. The program began with a noon banquet served at the Hotel Hanford, after which the following program was presented: Opening Address, Professor J. P. Ryan of Grinnell College; Proctology, Louis A. Buie, M.D., of Rochester; Various Diseases Associated with Paralysis, Frank J. Rohner, M.D., of Iowa City; Analgesia in Labor, E. D. Plass, M.D., of Iowa City; Dermatology, Harry C. Willett, M.D., of Des Moines; The Diagnosis and Treatment of Injuries to the Vertebral Column, Fred L. Knowles, M.D., of Fort Dodge; and Therapeutic Hints for the Treatment of Angina Pectoris and Coronary Occlusion, Henry D. Holman, M.D., of Mason City. All papers were well received and discussed, and it was the consensus of opinion that this was one of our best meetings.

At the business meeting a letter of invitation from the Mayo Clinic was read, and it was unanimously agreed to accept the invitation to hold the fall meeting of the organization in Rochester, as guests of the Mayo Clinic. The meeting will be held the latter part of September. Officers for the ensuing year are: Dr. T. J. Irish of Forest City, president; Dr. W. J. McGrath of Elkader, vice president; Dr. H. W. Rathe of Waverly, secretary; and Dr. W. E. Long of Mason City, treasurer.

W. E. Long, M.D., Secretary

### Iowa-Illinois Central District Medical Association

About one hundred and fifty physicians, their wives, and guests attended the annual meeting of the Iowa-Illinois Central District Medical Association held Thursday, July 11, at the Outing Club in Davenport. James Herbert Mitchell, M.D., associate professor of dermatology at Rush Medical College, Chicago, conducted a skin clinic from two to five-thirty in the afternoon. The two following scientific papers were presented after the six-thirty banquet: The Historical Background of Operations for Prostatic Obstructions, Hugh Cabot, M.D., professor of surgery, Graduate School of Medicine, University of Minnesota; and The Treatment of Infected Frac-

tures, H. Winnett Orr, M.D., orthopedic surgeon of Lincoln, Nebraska.

At the business session, the following officers were elected for the coming year: Dr. Howard A. Weis of Davenport, president; Dr. G. D. Hauberg of Moline, vice president; Dr. James Dunn of Davenport, secretary; and Dr. F. E. Bollaert of Moline, treasurer.

James Dunn, M.D., Secretary

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## INTERESTING NEWS

### In Brief

Public health authorities have estimated that approximately one-half of the people of the United States use water for drinking and cooking from wells or cisterns.

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A record for early child-birth is probably held by a little Mohammedan girl of Delhi, India, who at the age of seven, through a Cesarean section, gave birth to a child weighing 4 pounds and 3 ounces. The mother is reported to have been 3 feet 11 inches tall and 48 pounds in weight at the time the child was born.

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As a result of carefully given intelligence tests over a series of years on a group of 83 children who had suffered from encephalitis, Dr. Andrew W. Brown of Chicago states that in all cases mental deterioration occurs, but in the group manifesting Parkinsonian symptoms, the deterioration is faster and greater in amount.

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Trachoma, which is on the decline in the United States, is still a problem among the Indians of the southwest. Three hundred Indian children suffering from this disease will receive intensive treatment and some incidental schooling at the newly established "trachoma school" on the Fort Apache Reservation in Arizona.

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## PERSONAL MENTION

Dr. Arthur Steindler of Iowa City, head of the orthopedic surgery department in the State University of Iowa, College of Medicine, has been appointed to serve on the advisory committee of the Georgia Warm Springs Foundation.

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Dr. and Mrs. H. C. Willett of Des Moines, are planning to sail from New York, August 14, for a summer abroad. They will visit in London, Brussels, Paris and Vienna, before going to Budapest, where Dr. Willett will attend the International Congress of Dermatology. They expect to return some time in October.

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Dr. W. B. Brown of Mt. Pleasant, spoke before the local Kiwanis Club, Monday, July 15, on the subject, "Mental Diseases and Their Causes".

Dr. F. B. Dorsey, Jr., of Keokuk, attended the recent annual meeting of the American Society for the Study of Goiter, held in Salt Lake City, Utah, and was re-elected recording secretary of the organization.

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Dr. George Mogridge has retired from active service as superintendent of the State Institution for Feeble-minded Children at Glenwood, and the board of control has appointed Dr. H. B. Dye to fill the position. Dr. Dye has been acting as assistant superintendent for a number of years.

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The following new physicians have located in various towns and cities in Iowa during the past month: Dr. C. B. Murphy, formerly of Coleraine, Minnesota, has arrived in Alton to form an association with Drs. D. J. Gleysteen and R. W. Cooper; Dr. C. C. Nelson, who has spent the past six months in Battle Creek, Michigan, taking special postgraduate work, plans to locate in Red Oak at once; Dr. Robert F. Moerke has entered the practice of medicine in Burlington, being associated with his father, Dr. A. C. Moerke, who has practiced in Burlington for thirty-nine years; Dr. Walter E. Gower, a graduate of Rush Medical College, Chicago, and who has completed a three years' internship at the Cook County Hospital in Chicago, has located in Pocahontas, where he will be associated with Dr. G. F. Parker; Dr. R. W. Schmitt, who was graduated from the State University of Iowa, College of Medicine, in 1934, and completed his internship at the Iowa Methodist Hospital in Des Moines, will become affiliated with Dr. S. H. Arthur, who has practiced his profession in Scranton for forty-five years; Dr. Byron I. Mueller, another graduate of the State University of Iowa, College of Medicine, who served his internship at the University Hospital, has entered the practice of medicine in St. Charles with Dr. Ivan K. Sayre; Dr. L. C. Garling, who was graduated from the State University of Iowa, College of Medicine, and who has just completed a special postgraduate course at the Mayo Clinic in Rochester, has been engaged by Dr. M. W. Moulton of Bellevue as his assistant at the Moulton Hospital; Dr. R. J. Eischeid, after practicing medicine for nineteen years in New Albin, has located in Cresco; Dr. R. M. Needles was graduated in 1932 from the State University of Iowa, College of Medicine, spent two years as an interne at the Western Reserve University Hospital in Cleveland, and one year as house physician at the Community Hospital in Beloit, Kansas, and now has taken over the office and practice of the late Dr. H. E. Campbell of Anita; Dr. A. L. Murphey, another young physician who was graduated from the State University of Iowa, College of Medicine, has completed his internship at the Fairview Hospital in Minneapolis, and has located in Fredericksburg, where he will take care of the office and practice of the late Dr. Louis Rich; Dr. E. C. Kepler, formerly of Allison, has moved to Waverly; Dr. Maurice L. Zox, a graduate of Rush Medical College, has taken



over the practice of the late Dr. Adolph Arent in Callender; Dr. S. P. Leinbach, who was graduated in 1934 from the State University of Iowa, College of Medicine, and who interned at the Ancker Hospital in St. Paul, has located for the practice of medicine in Belmond, where he will be associated with Dr. G. F. McBurney.

### MARRIAGES

Miss Millicent Christner of Lake Forest, Illinois, and Dr. E. E. Munger, Jr., of Spencer, were married Saturday, June 29, at the home of the bride's parents in Rosamond, Illinois. Dr. and Mrs. Munger departed by automobile for a tour of the east, after which they will be at home in Spencer where Dr. Munger is engaged in the practice of medicine.

The marriage of Miss Edlee May Robinson of Cedar Rapids, to Dr. H. Earl Pfeiffer, also of Cedar Rapids, took place in Chicago, Saturday, June 29, at the home of the bride's sister, Mrs. Robert E. Buchanan. After a train and boat trip through the northwest, Dr. and Mrs. Pfeiffer will return to Cedar Rapids, where Dr. Pfeiffer had been practicing for a number of years.

Tuesday, July 9, Miss Vera Bittle of Lisbon was married to Dr. Harold O. Gardner of Waterloo, at the home of the bride's mother in Lisbon. After a wedding trip to Wyoming, the young couple will be at home in Waterloo, where Dr. Gardner has been engaged in the practice of medicine for the past six years.

### DEATH NOTICES

Arent, Adolph, of Callender, aged sixty-one, died suddenly July 10. He was graduated in 1895 from Rush Medical College, University of Chicago, and had long been a member of the Webster County Medical Society.

Harris, William, of Mystic, aged fifty, died July 17, following a stroke of paralysis. He was graduated in 1912 from the Milwaukee Medical College, and at the time of his death was a member of the Appanoose County Medical Society.

### OBITUARIES

ELBERT WILLIAM ROCKWOOD, A.M., M.D., Ph.D.  
1860-1935

#### An Appreciation

Former students in the College of Medicine of the State University of Iowa will be grieved to learn of the death of Professor Rockwood on July 17, 1935. At alumni gatherings we were always assured the

cordial handclasp by Dr. Rockwood, and his remarkable memory rarely failed him in recalling the name of an old student.

Coming to Iowa in the beginning of the nineties, he established the first department of physiologic chemistry in the middle-west, next to the one at the University of Michigan. He brought the flavor of the great Master Hoppe-Seiler of Strassburg, and introduced the first systematic course in biological chemistry into the Iowa medical curriculum. In 1895 in recognition of his scholarly and scientific attainments as particularly applied to the field of medicine he was granted an honorary degree of Doctor of Medicine by the University of Iowa. For many years he acted as secretary to the medical faculty.

It is interesting to note that Dr. Rockwood was present at the fortieth anniversary alumni meeting of the medical class of 1895 in June, and gave an interesting talk. There were seventeen class members present at this reunion, including Drs. L. C. Kern, of Waverly; J. A. Burgess, of Iowa Falls; W. W. Bowen, of Fort Dodge; W. R. Whiteis, of Iowa City, and Dr. Albert M. Barrett, Director of the State Psychopathic Hospital, University of Michigan.

Dr. Rockwood was granted the degree of Doctor of Philosophy at Yale University in 1905 for advanced work in physiologic chemistry in the Department of Professor Chittenden. Dr. Rockwood was an extensive traveler, particularly in Europe, and being an expert photographer, his collection of views in different parts of the world formed the theme of many an interesting evening's entertainment. He encouraged and stimulated medical students to recognize the true value of a fundamental scientific training preparatory for the practice of medicine, and distinctly influenced the careers of many Iowa university graduates in medicine.

W. L. B.

ADOLPH A. ARENT, M.D.  
1873-1935

#### An Appreciation

With the death of Dr. Adolph A. Arent, on July 10, 1935, there passed from the medical profession of Webster County, one of its most able practitioners.

The Webster County Medical Society has lost one of its most valued members and a true friend of the profession. For forty years Dr. Arent stood as a leader and respected physician in his community. He was a willing worker and always ready to lend a helping hand in the time of need. He was a true friend to both the lay and the professional members in this community. His vacancy will be difficult to fill, for we have all lost a valued friend.

It is recommended that this tribute of regard for Dr. Arent from the Webster County Medical Society be recorded in the minutes and that a copy be forwarded to his family and to the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY.

Webster County Medical Society.

# HISTORY OF MEDICINE IN IOWA

*Edited by the Historical Committee*

DR. FRANK M. FULLER, Keokuk  
DR. JOHN T. McCLINTOCK, Iowa City  
DR. PAUL W. VAN METRE, Rockwell City

DR. TOM B. THROCKMORTON, Des Moines  
DR. WALTER L. BIERRING, Des Moines  
DR. WILLIAM JEPSON, Sioux City

## A History of Medicine in Jefferson County, Iowa

JAMES FREDERIC CLARKE, M.D., F.A.C.S., Fairfield

(Continued from last month)

The problem of the care of the indigent poor of Jefferson County has never been satisfactorily settled in all these years. For long it was the custom for each doctor to submit his bill to the board of supervisors. During this time when a doctor was called he must get the permission of "the overseer of the poor" to attend the case. There was frequent friction between the board and the individual doctors as to the bills. A number of times a board has employed one doctor to care for all smallpox cases during an epidemic. At times the board made a contract with one doctor to care for all the poor in Fairfield. The board of supervisors has nearly always required the doctors to accept less than the regular fees for county work. We believe that attorneys and grocers, in fact everyone but the doctors, have their bills paid in full, with no reductions. The cause for this exception of the medical profession has never been explained.

In April, 1929, a committee from the Jefferson County Medical Society met with the county board of supervisors to consider a contract for the medical care of indigents. The expense for the medical care for the entire county, including the county home during the previous year had been something over \$3,200.00. A contract was entered into for the medical care, including medicines, of the indigent sick in the city of Fairfield, the West End Addition, and all patients brought to the Jefferson County hospital from any part of the county, for the sum of \$1,600.00 annually, to be paid to the secretary of the county medical society, monthly. All orders for medical care were issued by the county overseer of the poor or the township trustees. The contract was renewed each year in 1930, 1931 and 1932 for the same amount. As the number of indigents

increased about fourfold during those years, when the contract was renewed in 1933 it was on a different basis. The present contract for one year, dated May 1, 1933, stipulates that medical care shall be rendered to the indigents from the same area as before, but the compensation is based upon the fee bill approved by the Iowa State Medical Society, and a discount of 50 per cent of the amount of services rendered under the above mentioned fee bill is paid to the Jefferson County Medical Society, monthly.

The year 1934 is now drawing to a close. Almost one century has passed since the first white settler came to Jefferson County, Iowa. This county now has a population of 16,000 people. These people are served today by nineteen regular physicians, one homeopathist, ten dentists, three osteopaths, five chiropractors, one "Christian Science healer" and one "bonesetter." There are in addition six druggists who, with their clerks, freely prescribe and sell the handy packages of medicines put up by and advertised by the large pharmaceutical houses of the country. These packages of tablets have, in a great measure, replaced the "patent medicines," in popular esteem. The doctors of Jefferson County write few prescriptions. Each carries, in his office, a supply of medicines. The county hospital, by bringing the doctors together, where each observes the work of all, has helped much in mutual education. More and more the technician is employed in laboratory work.

Scientifically considered the practice of medicine in Jefferson County is, in 1934, fairly abreast of the times. The mass of the people are well educated in asepsis and hygiene. The health of the community is good. However, through the scientific journals of the day are coming to us glimpses



of new studies of chromosomes and genes; of protons and neutrons; of vitamins and the relations of certain metals to metabolism; a few glimpses into the beginnings of a new century in medicine that is to pale the advances of the century just passed. The world today is a community more intimate than was the territory of Iowa in 1835. The practice of medicine in Jefferson County, Iowa, in 1934, is like that of all communities of the more civilized world.

From its financial aspect the medical profession of Jefferson County is at a low ebb in 1934. For five years the people of this county have been in the throes of the greatest depression ever known. Banks have failed, closed and reorganized. This year has witnessed an unprecedented drought. The farm crops all are ruined. The doctor's income has sunk to a minimum. Debts generally are not paid and all except the most imperative medical services are avoided. Because of the lack of money the doctor must, as of old, accept other commodities in payment for his services. State medicine is much discussed. Profound changes in medical economics seem imminent. The scientific advancement, the economic developments of the next hundred years we cannot estimate.

#### APPENDIX

To Dr. Clarke's History of Medicine in Jefferson county, Iowa. Figures in parentheses are years of practice or residence in Jefferson county.

The doctors who have practiced medicine in Jefferson county from 1835 to 1934 include:

1. Allen, E. C.: (1908). Practiced in Fairfield in 1908. No data.
2. Aylesworth, William H.: (1895-1896). Came from and went back to California. Failed in practice and worked in the Loudon factory.
3. Bailey, C. W.: (1899-1931). Born in Iowa in 1871. Read medicine with Dr. Norris of Birmingham. Graduated, Keokuk Medical College, 1897. Practiced in Pleasant Plain. Was councilman and mayor of his town. Had a friendly disposition. Strongly opposed the building of the Jefferson County Hospital. Died October 10, 1931.
4. Baker, Charles H.: (1881-1884?). Practiced in Fairfield for several years. No data can be found. Was an educated gentleman and taught Hygiene in Parsons College while a resident here during the years 1882-84.
5. Baldrige, Milton D.: (1857-1907). Born in Ohio in 1826. Father was a doctor. Graduated in Cincinnati, Ohio, in 1826. Practiced in Batavia. Son is a doctor practicing in Batavia. Died in Batavia in 1907.
6. Baldrige, John H.: (1904-1917; 1930 to this date). Born in Batavia, Iowa, in 1878. Attended schools and academy, Quincy, Illinois. Graduated Keokuk Medical College, 1904. Postgraduate work in Chicago. Practiced in Batavia 1904 to 1917 then entered Army Medical Corps. After duty at several army posts was stationed in Philippine Islands and China three and one-half years. Was discharged from army (resigned) in 1920. In charge of In-

dustrial Hospital for the Insular Lumber Company at Fabrica, Occidental Negros, 1920 to 1925. Went to Singapore, east and north coast of Africa, Egypt, Algiers. Returned to his Iowa home and again went to the far east for five years, in the same hospital. Spent one and one-half years at sea of the thirteen years away from Batavia, making two complete and four trips one-half way around the world. Since October, 1930, has been practicing in Batavia. Is certainly the most traveled Jefferson county doctor.

7. Barney, A. F.: Practiced in Jefferson county in 1884. No data.

8. Bartow, G. P.: (1862-1885). The first doctor to reside in Blackhawk township at Baker post office. Born in Ohio, 1837. Graduated, 1858, Cincinnati Medical Institute. Owned and managed a farm of 396 acres. Served in Company A, 36th Iowa Infantry in Civil War. Discharged in 1864. Read medicine and practiced, before taking a course of lectures, with Dr. S. K. Tracey. Helped write "The Centennial History of Jefferson County". Wife was "Aunt Susie" to the whole community, "a splendid lovable woman and helpmate". Was killed in a duel. Was kind to his patients and accepted any thing in payment for his services. Was a man of great courage and strong convictions.

9. Bean, John Victor: (1887-1919). Was born in Pennsylvania in 1842. Graduated from the Bellevue Medical College in New York in 1868. After graduating from the Academy at Conneaut, Ohio, read medicine with Dr. A. K. Fifield. Served as contract surgeon in the United States Army at Fort Stephenson, Fort Buford, Fort Shelly, and Fort Randall, all in Dakota territory. After practicing at Moulton and Burlington, Iowa, came to Fairfield in 1887. A man of good education, belonged to national, state and local medical societies and for fifteen years lectured on Hygiene in Parsons College. Was health officer in Fairfield and his enforcement of health laws was notable; spared no violator. Was a man of strong integrity. Stood for a rigid code of professional ethics as noted in the preceding history. Was an educated, Christian gentleman and an excellent citizen. In his early professional life published a volume of "Family Medicine" which he later regretted. Was not a brilliant surgeon. His colleagues resented at times his criticism of what he considered their ethical waywardness but they knew him to be honest and steadfast to his trust.

10. Beard: Practiced at Lockridge for a short time about 1920. In an attempt to board a moving train he fell under the wheels and both legs were mangled. Died after a double amputation in the Burlington Hospital.

11. Billingsley, J. S.: (1883-1885). Born in Glasgow, Jefferson county, in 1856. Graduated from Rush Medical College in 1883. Began practice in Glasgow in 1883 and in 1885 moved to Belleville, Kansas. Died in 1917, greatly respected by all who knew him.

12. Bishop, Carl S.: (1894 to this date). Born on a farm in Jefferson county, October 21, 1864. Graduated from Parson College in 1888 and from the Keokuk Medical College in 1894. Studied medicine with Dr. David Stever in Fairfield. Began practice in Glasgow in 1894 and has since been in active practice in the same location. With a natural adaptation to his profession and an excellent education Dr. Bishop has been unusually successful. In his early years of practice he lived through the hardships of pioneer days, walking many miles on his professional calls, when the roads were impassable for his horses. At one time he was five hours going five miles because of drifts of snow.

13. Bissel: (1865?) Practiced in Fairfield in 1865. No data.

14. Black: Practiced in Batavia. The only fact known is that he committed suicide.

15. Blackmer, George M.: (1884?). Practiced in Batavia about 1884. Moved to New York. No data.

16. Blair, George H.: (1871-1884). Born in New York in 1830. Graduated from the Cleveland Homeopathic Medical College in 1851. Served as surgeon in the United States Marine Hospital in Cleveland and was professor of theory and practice of medicine in the Women's College of Cleveland. Was President of the Iowa State Homeopathic Society in 1874 and for a time was the examiner of the Homeopathic Medical School of the University of Iowa. Was one of the few homeopaths who have had a large practice in Jefferson County.

17. Boets, George: Practiced at the Baker post office. No data. Vague reports show no excellence of education or work.

18. Bonnell, F. S.: (1915 to this date). Born in Iowa in 1884. Educated in the public schools. Worked in stores, in a photograph gallery, for railroads. "Roamed" Mexico and Texas "riding the rods". After a course in the Dallas Medical College he worked in a drug store, then two years in St. Louis College of Pharmacy, with night courses in Brown College in 1913. Was an interne in the Methodist Hospital, Des Moines, Iowa, one year, thence to Ottumwa and then to Fairfield in 1915, where he has practiced as a specialist in diseases of the eye, ear, nose and throat. Perhaps no doctor of the county has had such varied experience in his pre-medical career. Hobby is building and renting business houses. Perhaps it is fair to say that with him the practice of medicine is an avocation. His vocation is building and improving business properties to the amazement of his colleagues who themselves feel unable to finance any such projects.

19. Boyer, Edward: (1840) Practiced in Jefferson County in 1840. First doctor in Des Moines township. No data.

20. Bradshaw, A. C. D.: (1879-1905) Born in Jefferson County, 1846. Graduated at the University of Michigan in 1897. Had one year of postgraduate study at Rush Medical College, 1879. Practiced in Salina and in 1879 moved to Fairfield. Owned a drug store with Dr. R. H. Hufford as a partner, and later was with Louis Thoma for twenty-five years. Was known in Fairfield as a druggist and as president of the Fairfield Furniture Company. Was an active business man and in later years did not practice medicine. Died in 1905.

21. Bradshaw, Joel Benjamin: (1872-1876?). Brother of Dr. A. C. D. Bradshaw. Born in Jefferson County, 1850. Graduated from Rush Medical College, Chicago, in 1872. Practiced at Salina a few years, and then located at Stiles, Iowa, where he died in 1884.

22. Brooks, S. H.: Practiced at Lockridge. No data.

23. Campbell, Eugene: (1878-1893). Born in Fairfield, Iowa, 1856. High school graduate, two years in academy. Read medicine with Dr. Joel King. Graduate, New York Homeopathic Medical School, 1878. Practiced in Batavia, 1878-1879; then in Fairfield to 1893, with one year's absence. Moved to Los Angeles in 1893, and has since practiced there. Took postgraduate work in London and New York City. Was a member of the American Institute of Homeopathy. Lectured on pharmacology in the Homeopathic Medical School of the University of Iowa. Was a commissioner of insanity for Jefferson County and was on the United States Pension Board for

some time. An educated gentleman highly respected. He had a large practice in Fairfield.

24. Campbell, S. M.: (1881-1882). Born in Fairfield, Iowa, in 1853. Graduated at the Chicago Homeopathic Medical College in 1881. Practiced in Batavia and in Fairfield for a year and then moved to Omaha, Nebraska, where he died.

25. Carpenter, Marcellus C.: (1885-1925). Born near Ottumwa, Iowa, in 1857. An Iowa Wesleyan College graduate. Graduated from Rush Medical College in 1885. Practiced in Fairfield from 1885 until his death in 1925. Was a quiet unassuming man who kept the even tenor of his way undisturbed by the events of the world. Was honest and respected by all. Served long and well on the Pension Board but other than this, his energies were given entirely to his patients.

26. Carter, C. W.: (1904). No data. Practiced in Lockridge. Lived in Jefferson county but a short time.

27. Castle, Curtis H.: (1878-1881). Born in Illinois in 1848. Graduated from Northwestern University Medical School in 1872. Post graduate work in Keokuk, Iowa, 1876-77. Practiced at Merrimac. Was much interested in socialism. Went to Merced, California, in 1888.

28. Childress, Moses: (1898-1902). Born in Iowa in 1870. He was a druggist several years. Studied medicine and graduated from the Louisville Medical College in 1897, and from the Barnes Medical College of St. Louis in 1898. Began practice in Packwood and moved to Oskaloosa, Iowa, in 1902, where he is still in successful practice.

29. Clarke, Charles Shipman: (1843-1882). Born in Marietta, Ohio, 1814. Studied medicine in Cincinnati, Ohio, 1835, and after active practice in Kentucky, took another course in Cincinnati, graduating in 1843. Came to Mt. Pleasant in 1843, his practice extending into Jefferson County. Moved to Fairfield in 1857, where he conducted a drug store and practiced until his death in 1882. Was the medical member of a commission appointed by Governor Grimes to study eastern institutions and establish the first insane hospital for Iowa. The hospital was located in Mt. Pleasant in 1885. Had an excellent general education, was an omnivorous reader, had a wide acquaintance among the intellectual people throughout the United States and his Fairfield home was the center of the intellectual life of the community. Here met the Emerson Club and other study groups. A strong believer in absolute prohibition; he never sold alcohol in his drug store. About the coal stove in Dr. Clarke's drug store was the assembly place for a group of the intellectual leaders of Fairfield. Such a group of men discussing the abolition of slavery, the reconstruction of the country, Emerson's Essays, Bryant's Thanatopsis, the founding of the first public library in Iowa, the location of railroads in Fairfield—these were the topics of conversation. Such a forum, such an outstanding group of men, no longer exists in this county. Dr. Charles Clarke's life of twenty-five years in Jefferson County was that of an ideal citizen. A learned consultant for physicians; a business man of the highest ethical principles, refusing to profit by the sale of liquors or anything which might injure his customers; a leader in every movement for advancement of the community. He was prompt in meeting every personal obligation. He gave freely to the poor. He was the first president of the school board. His faith in mankind made him a firm believer in Universal salvation at a time when it was orthodox to people heaven with a select few. The writer never has heard any criticism of the character of this exemplary man.

(To be continued)



# THE JOURNAL BOOK SHELF

## BOOKS RECEIVED

**ANNUAL REPORT OF THE SURGEON GENERAL OF THE PUBLIC HEALTH SERVICE OF THE UNITED STATES**—For the fiscal year, 1934. United States Government Printing Office, Washington, 1934. For sale by the Superintendent of Documents, Washington, D. C. Price, seventy-five cents.

**THE AUTONOMIC NERVOUS SYSTEM**—By Albert Kuntz, Ph.D., M.D., professor of micro-anatomy, St. Louis University School of Medicine. Second edition, greatly enlarged and thoroughly revised. Octavo of 697 pages, illustrated with 73 engravings. Lea & Febiger, Philadelphia, 1934. Price, \$7.50.

**BODY MECHANICS IN THE STUDY AND TREATMENT OF DISEASE**—By Joel E. Goldthwait, M.D., Lloyd T. Brown, M.D., Loring T. Swaim, M.D., and John G. Kuhns, M.D. J. B. Lippincott Company, Philadelphia and London, 1935. Price, \$4.00.

**HOW TO PRACTICE MEDICINE**—By Henry W. Kemp, M.D., New York. Paul B. Hoeber, New York, 1935. Price, \$2.50.

**INTERNATIONAL CLINICS**—Volume I, Forty-fifth Series. Edited by Louis Hamman, M.D., visiting physician, Johns Hopkins Hospital. J. B. Lippincott Company, Philadelphia and London, 1935. Price, \$3.00.

**MORTALITY AMONG PATIENTS WITH MENTAL DISEASE**—By Benjamin Malzberg, Ph.D., New York State Department of Mental Hygiene, Albany, New York. State Hospitals Press, Utica, New York, 1934.

**OBSERVATIONS OF A GENERAL PRACTITIONER**—By William N. Macartney, M.D. Richard G. Badger, Publisher, The Gorham Press, 100 Charles Street, Boston, Massachusetts.

**PERIODIC FERTILITY AND STERILITY IN WOMAN**—A Natural Method of Birth Control—By Professor Herman Knaus, head of the clinic for gynecology and obstetrics, of the German University of Prague. With 64 illustrations and 12 tables. Wilhelm Maudrich, Publisher, Vienna, 1934. Price, \$6.50.

**REPORT ON SEVENTH INTERNATIONAL CONGRESS OF MILITARY MEDICINE AND PHARMACY**—Held in Madrid, Spain, May-June, 1933. By Captain William Seaman Bainbridge, M.C.-F., U.S.N.R. George Banta Publishing Company, Menasha, Wisconsin, 1934.

**SURGICAL APPLIED ANATOMY**—By Sir Frederick Treves, Bart. Ninth edition, revised by C. C. Choyce, M.D., professor of surgery, University of London. Illustrated with 174 figures, including 66 in color. Lea & Febiger, Philadelphia, 1934. Price, \$4.00.

**THE YEAR BOOK OF GENERAL MEDICINE, 1934**—Edited by George F. Dick, M.D., Lawrason Brown, M.D., George R. Minot, M.D., William B. Castle, M.D., William D. Stroud, M.D., and George B. Eusterman, M.D. The Year Book Publishers, Inc., Chicago, 1934. Price, \$3.00.

**THE YEAR BOOK OF GENERAL SURGERY**—Edited by Evarts A. Graham, M.D., professor of surgery, Washington University School of Medicine. The Year Book Publishers, Inc., Chicago, 1934. Price, \$3.00.

## BOOK REVIEWS

### BODY MECHANICS IN THE STUDY AND TREATMENT OF DISEASE

By Joel E. Goldthwait, M.D., Lloyd T. Brown, M.D., Loring T. Swaim, M.D., and John G. Kuhns, M.D. J. B. Lippincott Company, Philadelphia and London, 1935. Price, \$4.00.

Modern medicine has revealed many of the secrets of both the acute and chronic diseases. In the former, for the most part, the etiologic agent is known and treatment is well defined. In the latter group, however, the manifestations of the chronic condition may be understood and in many cases even the etiologic agent recognized, but all alike are characterized by an inadequate knowledge of treatment. In an attempt to treat the unresponsive types of arthritis more successfully, the authors of this work determined that many of the chronic states develop because of a peculiar body mechanics, or physiology, and that it was only through an appreciation of these peculiarities that favorable therapeutic results could be obtained.

Incidental to a study of arthritis they observe, for example, that "with diabetes or the cardiorenal disturbances, all of the cases have shown the sagged, commonly considered heavy, abdomen." "In these cases, commonly it is body sag instead of overweight that is the chief difficulty and from the common improvement with such cases, once the faulty mechanics is corrected, it is apparent that the pathological symptoms in the beginning at least are not the result

of actual disease or damage of the organ, but due to malposition of the organ with resulting disturbance of its function." Similar observations have been made in a number of other chronic conditions which have led the authors to employ corrective procedures which appear entirely justified because of these observations. The volume is well written, adequately illustrated and the contents carefully considered.

### THE MODERN METHOD OF BIRTH CONTROL

By Thurston Scott Welton, M.D., F.A.C.S., editor of the American Journal of Surgery. Walter J. Black, Inc., 2 Park Avenue at 33rd Street, New York City. Price, \$3.00.

During the past twelve or eighteen months much attention has been directed to the so-called natural method of birth control based upon the studies of Dr. Ogino in Japan and Dr. Knaus in Vienna. Each of the popular treatises on this subject has attempted to simplify the entire scheme, so that the layman can readily appreciate the essentials of the technic required and employ the methods with safety and satisfaction. Apparently one of the great difficulties of the method lies in the variability of the menstrual cycle in different individuals. In this volume Dr. Welton overcomes this obstacle by diagrammatic illustrations depicting the various phases of the menstrual cycle of the usual sort and also of the more unusual variations. The text is written in a clear, straight-forward style and is authentic insofar as

our present knowledge goes. The transparent calendar wheel accompanying the book can be superimposed upon the various charts referred to, so that the exact day or days in the cycle may be quickly determined. The volume appears entirely suited for the purpose for which it was intended.

#### THE DOCTOR'S BILL

By Hugh Cabot, M.D., The Mayo Clinic, Rochester, Minnesota. Columbia University Press, 2960 Broadway, New York City, 1935. Price \$3.00.

The economic side of medical practice has received painstaking consideration through many channels during the past few years, due to the current belief that the form of medical practice must undergo certain alterations to keep abreast of the social changes of the time. It seems fitting that a physician of Dr. Cabot's ability and experience should discuss this problem. In his book he quotes authoritatively from many sources and, while no plan or program is sponsored, he has presented many angles of the problem, so that the intelligent reader may logically consider the situation. The entire factual background, including the evolutionary changes in medical practice in the past, is presented in the opening chapters of the book. In later chapters various plans which have already been proposed or tried receive critical consideration. In his closing chapter, entitled "Where Do We Go from Here?", Dr. Cabot presents many proposals and critically investigates the claim of each proponent. To the physician whose interests demand a fuller knowledge of these economic problems, we commend this book as factually authentic and sufficiently thorough to acquaint the reader in this field.

#### USEFUL DRUGS

Edited by Robert A. Hatcher, M.D., and Cary Eggleston, M.D., ninth edition. Prepared under the direction and supervision of the Council on Pharmacy and Chemistry, American Medical Association. Published by the American Medical Association, 1935.

It is impossible for the physician really to know more than a very limited number of drugs. In recognition of this fact it seems particularly fitting, then, that an official bureau of the American Medical Association should undertake the task of selecting and listing a limited number of drugs of proved worth. The present revised list is the ninth to have been prepared by the Council on Pharmacy and Chemistry since 1913, and brings this work entirely up-to-date. Drugs which have become obsolete have been omitted, while others whose worth has become established have been added. Those included are discussed as to action, dosage and usages, and are conceded to be those of greatest therapeutic usefulness.

This volume is outstanding as a guide to useful drugs and will be found valuable alike by the student and the busy practitioner.

#### FOOD FOR THE DIABETIC

By Mary P. Huddleson, Editor, Journal American Dietetic Association. Third revised edition. The Macmillan Company, New York, 1934. Price, \$1.50.

By the skilful management of diet alone many diabetic patients have been brought into satisfactory adjustment to their disease. Others will require the assistance of insulin because of the severity of their condition. Those under insulin therapy require a most careful dietary programming since the carbohydrate-insulin balance is as delicate, or perhaps more delicate than in those not requiring this glandular product.

When one appreciates this viewpoint and further realizes that the diabetic patient must become his own dietitian in his daily living one fully realizes the need for a carefully prepared manual for the patient's use. An experienced dietitian has written this small volume, and its usefulness has been fully demonstrated in its earlier editions. In this the third revised edition the subject is brought in full accord with our present knowledge and its scope of usefulness broadened.

While intended primarily as a guide to diabetic management for the use of the patient, this, like most other good guides for patients, will be found useful to the general practitioner, particularly that practitioner who cares for only the occasional or uncomplicated case of diabetes.

#### REVIEW OF MEDICAL PROGRESS FOR 1934

Edited by Geo. M. Piersol, M.D., with 112 illustrations. F. A. Davis Company, Philadelphia, 1934. Price, \$10.00.

Several different publishers offer to the medical profession annually a compilation or review of the literature of the preceding year. The basic plan for each of these reviews differs and each meets a very definite and distinct need. In this Review of Medical Progress for 1934, the editorial plan is to present in encyclopedic form those outstanding contributions—particularly in the field of symptomatology, differential diagnosis, and treatment, which have appeared in the medical literature both domestic and foreign for the past twelve months.

Since it is impossible for one editor—or even a small editorial staff—to accomplish this end, Dr. Piersol, Editor-in-Chief, has secured the aid of some forty distinguished authorities, covering every phase of medical practice. The text covers nearly one thousand pages and is complete in every detail. The generous index places the material in a most accessible form, although for the most part the alphabetic arrangement of the several sections will render the use of the index unnecessary. Every physician, whether specialist or general practitioner, will find it a pleasure to have this volume on his desk for frequent reference.



# The JOURNAL

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No. 9

### TREATMENT OF ACUTE NEPHRITIS IN CHILDREN\*

C. ANDERSON ALDRICH, M.D.  
Winnetka, Illinois

Before I start into the discussion of this problem I should like to make one or two points distinctly clear. One is that I am talking about nephritis in children and not in adults. I emphasize that point because I think there is a decided difference not only in the type of nephritis one sees in adults, but also in the response of the adult mechanism to the disease, so that the prognosis is very different. I will speak about the definitely post-infection type of nephritis, the type in which the mother comes in saying that the patient had an acute tonsillitis or other febrile disease; two weeks later noticed bloody urine; finally developed a swollen face. I am not speaking primarily about chronic nephritis, either in children or adults.

*Prevention.* Much has been written about the proper management of acute streptococcal infections as measures of renal prophylaxis. This general thesis probably has some basis in fact, because acute post-infectious hemorrhagic nephritis is far more common in poorly cared for patients than in those properly supervised. I am not sure, however, that I can "go all the way" with Dr. Morse, who feels that it is a reflection on the care a physician gives his patient when acute nephritis occurs. Theoretically, rest, adequate fluid administration, avoidance of chilling, and all measures which shorten the febrile period should be important. I am not sure whether or not alkalis are of prophylactic value. They are often given in scarlet fever and similar illnesses, either in the form of sodium salts or of fruit juices. From a statistic standpoint it has been thoroughly demonstrated that high protein intake does not increase the percentage of cases of postscarlatinal nephritis, yet with general medical opinion as it is, one may think it wise to take a conservative position and

allow patients with severe febrile conditions to eat a small amount of protein only. Such a course avoids argument, at least.

#### TREATMENT OF THE ATTACK

*The infection.* The first thought of the physician confronted with this problem should be concerned with the care of any persisting manifestations of infection. This entails a thorough physical examination, particularly of the upper respiratory tract. It is frequently found that drainage of ear infections or of abscesses in the pharynx, nose, or cervical region results in rapid improvement of the clinical picture. In this connection it should be mentioned that surgical procedures are indicated rather than contraindicated by the presence of nephritis, even if it is necessary to give a small amount of ether. While it is true that most patients in whom successful surgical drainage is possible recover completely within a week or two, it is also a fact that in cases where this has been impossible, intractable mastoid and sinus infections for instance, the nephritis has sometimes cleared up while the infection persisted. I record this as a fact, the explanation of which is not clear.

*Toxic manifestations.* Except in the cases where it is possible to apply specific surgical measures, our attack upon the intoxication is limited to fluid administration and moderate catharsis. Because we have been impressed by the toxic rather than by the renal phase of this problem it has been customary to urge fluids on all nephritic patients regardless of the edema, urinary output, or any other consideration except persistent vomiting. Many years ago, Dr. Brennemann, on observing my efforts to restrict fluids in a toxic nephritic asked me "how I expected a toxic patient to recover without fluids", and was responsible for my change in attitude. Since that time, over ten years ago, water has been denied no patient and we have usually urged fluids. No patient so treated has died of acute post-infectious hemorrhagic nephritis in this period, and we have

\* Presented before the Eighty-fourth Annual Session, Iowa State Medical Society, Davenport, May 8, 9, 10, 1935.

had a consecutive series of over 250 patients. The only deaths were due to septicemia. It has not been our opinion that edema was increased by the free water regime. It seems rather that diuresis is hastened. Sodium salts should not be given with these fluids because the sodium ion favors edema formation. Of course, normal salt solution should not be given subcutaneously. I say that because three times it has happened that doctors who have heard me talk about forcing fluids in nephritis, have injected normal salt solution under the skin of nephritic patients, with very disastrous results. I want to emphasize that point right now so that none of you will misunderstand me. Subcutaneous salt solution should not be administered.

Theoretically, adequate fluid administration should dilute toxins and provide the vehicle for their elimination. The restriction of water tends to concentrate toxins and to decrease the urinary output because adequate excretion cannot take place in the absence of free water. It is my personal feeling that it is as dangerous to withhold fluids from a nephritic patient as it is to neglect antitoxin in diphtheria.

It is consistent with these ideas that the use of diaphoretics has not been advised for many years. Hot packs, sweats, and drastic cathartics have not been used because they were found ineffectual in the most critical stages. In addition it is now felt that, when combined with fluid restriction, they are actively dangerous. I should like to have time to mention case reports on this point, but I can only say in passing that during the time of increasing edema in nephritic patients, it is impossible to make them sweat. You can produce sweat only during the time of diuresis, and it is not necessary then, because diuresis is already present, and persistent sweating is not a comfortable thing for the patient. I am sure that it is dangerous in many instances. This opinion is based on experience with three patients so treated in the early days of this service. All promptly lapsed into coma, one died, and the others were saved only by heroic intravenous methods.

The use of magnesium sulphate by mouth, muscle, or vein might be considered an aid in eliminating toxins. This subject will be dealt with more fully under cerebral complications.

#### MISCELLANEOUS METHODS

*Diet.* While there is no demonstrable proof that protein restriction is of any value in treatment, it is so strongly entrenched by precedent that it is probably the part of discretion to include it in the management of the nephritic child. In

our series the interne was allowed to select the diet. A careful check of results does not show that those restricted did any better than those who were allowed protein. As a matter of fact, when the patient is critically ill, one is often delighted if he will take any kind of nourishment. One semi-comatose patient made a complete recovery on a diet of eggs, meat, bananas, and strawberries. We have felt that it was wise to restrict salt in those with severe grades of edema. This is unnecessary where edema is absent.

*Drugs.* We have not been successful in producing diuresis with any of the drugs usually prescribed for that purpose. I might add that they usually bring good results in cardiac edema, but not in nephritic edema. Only three drugs have been used in the management of our patients recently, acetyl-salicylic acid, potassium citrate, and magnesium sulphate. Acetyl-salicylic acid is used for symptomatic relief, potassium citrate as a harmless alkali, and magnesium sulphate in large doses for the relief of cerebral symptoms. From our series of patients it was not determined whether alkalization of the urine was of value, but it did not seem harmful in any way. Few of our patients were so treated.

*Hygiene.* The patient should be warmly dressed, but not smothered in clothing, isolated from infectious patients, and kept in bed until all symptoms and pathologic signs have disappeared. Isolation from infectious patients is most important, because it is not a comfortable thing to have a patient with acute hemorrhagic nephritis develop scarlet fever. The only exception we have made to this rule of bed rest has been in those children who have shown persistent albuminuria for months after their acute illness without other urinary abnormalities. In such cases it has seemed wise to allow the children free activity, and so far, all those so treated have recovered ultimately.

*Surgical measures.* As previously stated, acute nephritis is not a contraindication to surgery. If otherwise indicated, necessary operations should be performed, preferably under local or gas anesthesia. Ether, however, has been given in a few instances without serious results. It has been our custom to remove tonsils and adenoids before discharge from the hospital in all patients with throat symptoms. This was undertaken because at the outset we hoped that it would decrease the number of relapses or reinfections, and because we feared that once out of the hospital we would not be able to get the patients back for the operation. Our experience has caused us to doubt the validity of these fears. Relapses have been



almost unknown, and the patients in our clinic have been so cooperative that we have rarely failed to secure their consent to necessary procedures. However, the extremely low incidence of sequelae in our patients has made me continue this routine. It is our practice to postpone operation until all symptoms, except albuminuria and possibly an occasional red blood cell in the urine, have disappeared. We have then used ether as an anesthetic. No bad results have been observed, although occasionally we have found a slight postoperative increase in the albuminuria and hematuria.

#### TREATMENT OF CEREBRAL COMPLICATIONS

It is in the proper management of this condition that we have reduced the mortality rate from this disease. I prefer the term cerebral edema, or the cerebral complications of nephritis, rather than uremia, which is a misnomer. Also, I might say that this treatment for cerebral edema works just as well in chronic nephritis as it does in acute nephritis, except that after you have brought your patient out of his attack of acute nephritis, he is perfectly well, but after you bring him around in the chronic nephritis, he still has his chronic disease to combat.

Preventive treatment is extremely important in my opinion. Adequate fluid provision in all cases of nephritis will reduce the number of patients who show toxic symptoms, and these cerebral attacks are the most severe toxic manifestations to which nephritic patients are subject. We feel that the usual dehydrating measures combined with fluid restriction tend to increase rather than to lessen the toxic manifestations and are responsible for many uremic attacks. The giving of hot packs and drastic cathartics as preventive measures must be avoided. We feel that the diet is of minor importance, but we usually employ a low protein regime in those with acute nephritis.

I remember a story Dr. MacWiggan used to tell us years ago about an old doctor who was able to cure all his patients with one bark that came off the tree in the forest. I used to feel like this doctor, so I will tell you that story. Someone asked him how he managed to "get away" with that kind of treatment, that is, treating all his patients with one drug. He said, "It is very simple. All I do is to make an infusion of the bark of this tree. Then I start feeding it to my patients. I keep giving it to them in increasing doses and sooner or later they all have fits, and I am hell on fits." I used to feel that if these patients would only have fits, we could cure them, but otherwise I was in some doubt as to what to do. We have now evolved a system which we think

prevents the fits, and we use it on these precomatose patients.

I have not said much about blood pressure, but it is a most essential part of the examination. I would not mind if an interne occasionally forgot to examine the urine of one of these patients, but I would criticize him if he did not take a daily blood pressure reading, for by this we are forewarned of the possibility of uremic attacks. If there is any aspect of medicine in which you can say "always", you can say it about that. You will "always" have an increase in blood pressure before an attack of these cerebral symptoms in acute nephritis. I have never seen it to fail.

The active treatment of the attack may be divided into two parts, the method used in conscious patients who are able to take liquids, and that applicable to vomiting or comatose children.

1. *For those who are able to take fluids.* Liquids are urged upon the patient and all forms of nourishment are allowed, although proteins are generally somewhat restricted. (It is important to remember that nonprotein nitrogen retention in the blood is not by any means constant in this condition.) You may have a patient in coma, with acute nephritis with a perfectly normal nonprotein nitrogen in the blood. Do not rely on the blood chemistry at all in the diagnosis. I have seen that mistake made several times. Frequent determinations of the blood pressure are made, and if this mounts in spite of fluid administration, magnesium sulphate in 50 per cent solution is given in doses of from one to several ounces daily by mouth. The dose varies according to the age of the patient and the severity of the symptoms. This treatment is continued until the blood pressure is normal and the symptoms do not tend to recur.

At first glance it would appear that this method is in contradiction with what I have said above about drastic cathartics. The astonishing thing about this is, however, that in edematous patients, massive doses of magnesium sulphate cause remarkably few stools. I say that now without any fear of contradiction, because when I first said it, I was laughed at and told that was not the way it used to work. However, I have had letters and conversations with men from various parts of the country, confirming the observation that magnesium sulphate in doses of from five to seven, even as many as eleven ounces a day, does not cause loose stools, if the children are edematous. We have had to resort to enemas in some instances after having given many ounces of the saturated solution daily. The results, therefore, cannot be attributed to loss of water by bowel.

2. *If the patient is vomiting or comatose.* Spinal puncture may or may not be performed. We used to do this in all patients, but recently have found it unnecessary if the diagnosis is clear, and we have tended to eliminate the procedure. If the patient is not immediately improved by the spinal puncture and is, in convulsions or coma, we usually administer two per cent magnesium sulphate solution by vein. This is injected slowly, not over two to three c. c. per minute, while taking the blood pressure frequently on the other arm, and is stopped when the blood pressure approaches normal figures. Shortly after this the patients have always been so much improved that it has been possible to give them fluids by mouth, and to continue treatment as outlined in Group I. It is usually necessary to administer from 100 to 300 c. c. of the solution, depending upon the size of the child and the severity of the symptoms. If sufficient time is not allowed for the injection of the salt, it is not safe to use the blood pressure as an index to the dose. Other hypertonic solutions may be used, such as dextrose, but their use has not produced as prolonged results in our hands as has that of magnesium sulphate.

Recently we have had very favorable experiences with the technic used by Blackfan and McKhann, the intramuscular injection of 50 per cent magnesium sulphate solution. They give from two to six c. c. deeply into the muscles, and repeat the dose every few hours according to the symptoms and the blood pressure. This method has the obvious advantage that it requires less meticulous technic and can be carried out easily in the home. It has been my feeling that in the desperate situations which one occasionally encounters it is safer to use the rapid intravenous route than the more tedious intramuscular one. I must confess, however, that except under the most favorable conditions, and with careful and experienced physicians in charge, the element of safety provided by the intramuscular route decidedly offsets this consideration.

This bare outline of the treatment will be of little use to the physician unless he understands why it is used, because in these extremely ill patients the course is often punctuated with surprises and these can be understood and treated properly only if the pathogenesis is kept in mind.

The cause of the relief of symptoms is clearly not due to loss of fluids from the body either by bowels or kidneys, because improvement occurs before the weight decreases. It is due to *loss of fluid from the brain*. The symptoms are always preceded by an increase in blood pressure and we feel that the hypertension is compensatory, the

body's response to increased intracranial pressure developed by edema of the brain. Similarly, relief of symptoms is always preceded by a drop in blood pressure which we feel indicates a drop in the intracranial pressure.

This raises the question as to how magnesium sulphate brings about these spectacular results. Years ago, M. H. Fischer pointed out that hypertonic salt solutions of various sorts were of value in patients with cerebral edema, and he suggested that since magnesium sulphate was the most dehydrating salt known in its action on the tissues, it should be the most spectacular in its results. It was his theory that hypertonic salts exerted a shrinking effect on the colloids of the brain similar to that which he was able to demonstrate in various colloids in his laboratory. He expressed the belief that the water set free in this shrinking process was made available for absorption into the general circulation and then for excretion through the kidneys as soon as they were able to function. It seems to me that the behavior of our patients in every respect strengthens this hypothesis.

Patients with mild symptoms frequently make satisfactory improvement when put on a regime of forced fluids alone. The mechanism of recovery in these patients without magnesium sulphate needs further explanation. If it is considered that the primary cause of the edema is a toxin or chemical substance which causes the tissues to absorb more fluid than normally, it would seem unlikely that this fluid and the toxins held in chemical combination with the colloids of the body, could be eliminated by mere fluid restriction, sweats, or drastic cathartics. In fact one would expect that such measures would lead to an increase in the concentration of the toxic substance or substances and therefore to a greater tendency toward edema and lessened excretion of water through the normal channels. I have seen this result produced, apparently, in at least three patients who became more toxic, and developed convulsions and coma coincident with dehydrating measures.

If, on the other hand, fluids are freely administered, one might expect that simple dilution of toxins would follow, resulting in lessened affinity of the tissue colloids for water, and hence in a liberation of some of the chemically bound fluids. This water would then be free for elimination, and when excreted, would carry with it some of the toxins. In this manner it is possible to explain not only the clinical improvement following fluid administration, but also the fact that this subsidence of symptoms precedes a demonstrable loss in weight.



It will be seen, then, that while the pathogenesis of these cerebral attacks is not proved, the hypothesis above stated is clinically substantiated both from the standpoint of symptoms and treatment.

### OTITIS MEDIA—ITS MANAGEMENT\*

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The subject of otitis media is commonplace and dull, yet no one can deny its importance. You may wonder, as I did, why the subject should be presented by a pediatrician rather than by an otologist. To the general practitioner or the pediatrician, the disease, otitis media, must look entirely different in some aspects than it does to the otologist. The practitioner looks upon otitis media as a part of the whole clinical picture of the case. He is in a position to watch the case in its entirety, to observe the development of otitis media and to prognosticate the outcome to a limited extent. He is called upon to care for the upper respiratory infection or acute specific fever, which may precede the otitis media.

In actual practice otitis media is usually a complication of acute respiratory tract diseases, the acute specific fevers such as measles, scarlet fever, diphtheria, etc., and occasionally the acute intestinal fevers such as typhoid and dysentery. There can be little doubt that, in most instances, the infection is one of direct extension from the nasopharynx.

The symptomatology of the disease varies somewhat between older children and infants. In the older child, the presenting symptom is acute pain, localized in the ear. This pain is commonly associated with symptoms of respiratory infection and fever. In infants, however, fever, restlessness, apparent pain, vomiting, poor appetite, painful hacking cough, a loss of weight, diarrhea, etc., must direct attention to the ear. Small and malnourished infants may have a purulent otitis without pain or fever. One of the symptoms that should be specifically mentioned is that of diarrhea in infancy secondary to acute infections about the ear. Although still denied by some pediatricians and otologists, there can be no question that at times an aural infection will produce a train of symptoms in which diarrhea and dehydration are outstanding. In my opinion there may be some specificity of organisms which produce a certain syndrome, just as one may see epidemics of otitis followed by mastoiditis and lateral sinus thrombosis or seeming epidemics of tracheobronchitis.

In diagnosis the constant and intelligent use of the electric otoscope by the physician treating infants and children is fully as important as the use of the stethoscope. By using the electric otoscope the practitioner learns a great deal. In order to see the drum head the canal must be free of wax and debris. The use of the electric otoscope familiarizes the practitioner with the normal and abnormal picture as he conducts routine examinations. He soon learns to differentiate between redness and congestion and a decided bulging of the drum head. It is rightfully within his province to determine when the patient should be referred to an otologist for further, special care. It has always been my practice to refer all cases of otitis that need surgical care to the otologist except those in infants. It has been my experience that there still are many otologists who do not use an electric otoscope in examining the ear drums of infants. It has been my misfortune occasionally to refer infants for myringotomy and to have the otologist state that no otitis was present. On one occasion the drum membrane ruptured spontaneously within ten minutes after the otologist had stated that no pathology was present.

The diagnosis of otitis media, of course, has to be made primarily upon the appearance of the drum head. At the beginning of an infection in the middle ear there may be only a redness and congestion of the drum head. The eustachian tube in infancy is more patent than in the older child and is shorter. There is a better chance for drainage into the nasopharynx and into the middle ear than in the older child. As the disease progresses, the redness, congestion and swelling of the drum increases along and above the handle of the malleus and the short process, and the bulging of the drum becomes evident. It is much more difficult to determine the status of the drum in the infant than it is in the older child. The ear drum lies more or less horizontal to the usual line of vision in the infant. As previously stated, it is almost impossible except by examination with the electric otoscope to determine the status of the ear drum in a young infant.

The redness of the drum with swelling and congestion along the handle of the malleus calls for conservative treatment by the use of drops and possibly heat. There can be no question that five per cent phenol in glycerin in many cases has a very good analgesic effect. It is surprising how many cases will clear up spontaneously without a purulent otorrhea developing. If the pain is persistent in spite of the use of phenol in glycerin, it usually indicates the presence of a progressive condition that will lead to spontaneous rupture or require myringotomy.

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There can be no logical objections to the practitioner doing a myringotomy, providing that he is qualified. One must remember, however, that myringotomy, especially in infants, is not without danger. I have seen myringotomy in infants followed by such profuse hemorrhage that transfusion became necessary within a few hours. The probable explanation is that the jugular bulb was accidentally opened. In addition to the danger of hemorrhage, there are numerous reports in the literature regarding injury to the facial nerve as well as to the wall of the middle ear, with subsequent fatal meningitis.

The best guide that I know of, as to the degree of bulging of the drum head, is the appearance of the short process. As long as one can see even a small white area, myringotomy is not especially urgent. When the short process becomes invisible, it is usually necessary to do myringotomy. An acutely bulging drum may subside spontaneously but, if it persists and there is a dull, lusterless color, with or without much fever, it should be incised. If in addition, the bulging appears in the lower half of the drum, as a curved, sausage-shaped continuation of the posterior portion of the upper bulge, incision is indicated. Of course, everyone realizes that mastoid tenderness in itself is an indication of paracentesis. It is often stated that early paracentesis will prevent numerous cases of mastoiditis and its complications. It has been my misfortune, however, to see children, whose ear drums were incised early, go through the whole train of mastoiditis, lateral sinus thrombosis, septicemia, meningitis and death without even one delay.

The experienced practitioner will not worry about the fact that an ear drum has ruptured and is draining freely. If suspicion of an aural complication develops, however, he should not hesitate to consult an experienced otologist to share the load with him. In case of complications, it takes the utmost cooperation of the practitioner and the otologist to determine the source of the symptoms and whether surgical intervention is indicated. When serious complications such as mastoiditis, meningitis, sinus thrombosis and septicemia appear, we wish for even more knowledge and judgment than can usually be mustered in the team of the practitioner and the otologist.

There is still considerable question in my mind as to whether the prognosis of the patient with a spontaneously ruptured drum is poorer than that one in which early myringotomy is done. A number of years ago it became a rather common practice for certain individuals to incise suspicious looking ear drums and this practice should, of course, be condemned, because one realizes that in-

cision of the ear drum is not without danger as far as producing a suppurative otitis is concerned.

There is a wide divergence of opinion regarding the care of the ear after paracentesis. Some pediatricians and otologists condemn aural irrigations following myringotomy. I believe it is true that many probably do as well without irrigations, but could not honestly state that I believe irrigation has added to the complications. I do, however, believe that irrigation tends to keep the drum from sealing over before the infection has cleared.

The primary condition may be an acute nose and throat infection, a pneumonia or a specific fever such as scarlet fever or measles. One must look faithfully to the nutritional and hygienic care of the patient and I do not believe that one can over-emphasize the importance of rest in this infection, as in other infections. I believe many cases of otitis media progress to complications because of this one fact, namely, the lack of rest. Energy which should be applied to the healing and walling off of infection is spent in exercise, resulting in an extension of the original infection.

Investigation in recent years has brought out one fact with which many of you may be familiar but which I believe should again be stressed. It has been found that in practically every case of otitis media there is also present a definite sinusitis, often on the same side as the otitis. You, of course, realize that this may be very important in the treatment. Occasionally one will see a child with an otitis media, mastoiditis and a purulent sinusitis where it seems that mastoidectomy is inevitable. In that same case one may see a complete relief of the otitis and mastoiditis following surgical drainage of the infected sinus. Likewise, there may be a great deal of value in conservative treatment of the nasopharynx at the time an acute otitis is present.

In infancy, at least, one will frequently see recurrent otorrhea aggravated by an enlarged mass of adenoids and the persistence of adenoid tissue about the eustachian orifice. Many times this recurrent otorrhea will clear up following adenoidectomy.

It is not within the scope of this subject to enter into a discussion of the complications of otitis media.

#### CONCLUSIONS

1. Otitis media is a malady of great importance in the general practice among children.
2. Diagnosis depends in a large measure on intelligent use of the electric otoscope and proper clearing of the ear canal previous to inspection of the drum head.



3. Myringotomy may be done by the practitioner, providing he is properly qualified.

4. In addition to treatment of the infection localized in the ear, nose and throat, it is of utmost importance to treat the causative malady by proper hygiene and nutrition.

#### MANAGEMENT OF RESPIRATORY INFECTIONS FROM THE STANDPOINT OF VENTILATION AND DRAINAGE\*

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It is axiomatic that the more treatments there are for a disease the less value has each treatment. Though this seems to be true in relation to respiratory infections one sees on analysis that there is real worth in most of the common maneuvers, but, aside from induction of comfort, only in that degree to which each accomplishes the dual purpose of ventilation and drainage of the respiratory tract; that there is little value and possible harm in any agent whose use discourages ventilation and drainage.

Infection of the respiratory tract is comparable to infection of the skin. As long as the process remains superficial little general effect is produced. Only when free discharge of the products of infection is impeded or when the processes of infection interfere with normal aeration do these respiratory diseases become of major importance. Exceptions to this rule are diphtheria and scarlet fever whose exotoxins are potent enough to be dangerous even though there is no retention of secretion or demonstrable membrane defect. However, in these two diseases, aside from their exotoxic effect, the secondary manifestations are dependent upon failure of aeration and drainage. Unlike the skin, the respiratory tract is not accessible to topical antisepsis, and infections thereof are not influenced by the use of antiseptics.

Physiologically, the respiratory tract represents a long and irregular air tube lined with a mucous membrane which has the power of secreting saline solution and mucus, and which, by means of its ciliated epithelium and intrinsic control of air currents is able to expel small foreign substances. Because of its sympathetic and parasympathetic nerve supply it can vary its internal diameters by means of a change in vascularity and unstriated muscle activity. It has many "buds", small, as in the lymphoid crypts, and large, as in the sinuses, middle ears and lungs. From a practical standpoint the neighboring lymph glands may likewise be considered as "buds". It has within its walls islands of lymphoid tissue. Throughout its course it is in close relation to vulnerable tissues

with which it is intimately connected by lymph channels. At its distal extremity is a bellows whose function, as far as the upper respiratory tract is concerned, is to provide air currents varying from a quiet, almost imperceptible flow, to a violent blast.

In the respiratory tract whose normal physiologic response to infection has not been impaired, spontaneous aeration and drainage is accomplished in the following way: the mucosa begins to over-secrete, at first a thin salty solution, then mucus, both intermixed with the products of epithelial degeneration and leukocytes. Then, providing that ciliary activity is not impaired, this mucus is passed along by the cilia, always in the direction of the nearest exit to the nose or pharynx. This movement toward the primary tract is distinctly aided by air currents. Proetz and others have described the changing intrasinus pressures by which normal and forced respiration are able to evacuate these areas. Jackson has well named the "tussic squeeze" of the lung bed, by which secretions are forced into the larger bronchi, and the "bechic blast" which is a means of quickly cleansing the larger tubes. Undoubtedly a change in body position exerts a strong influence on drainage.

Unfortunately, we have few respiratory tracts which can be considered normal, either structurally or physiologically. Septal deviations, hyperplastic or edematous turbinates, foreign bodies and adenoids are common. Ciliary action is often lost as the result of chronic infection. In the course of infection obstruction may arise because of swollen mucosa, viscid secretion, mucous plugs, fibrinous membranes, rapid hyperplasia of lymphoid tissue and intrinsic muscle spasm.

It would seem that in respiratory infections the problem of restoring normal function as definitely as possible will depend upon our ability to re-establish adequate ventilation and drainage. Luckily, in the case of the respiratory tract, potential drainage areas are already provided and whatever we do in treatment must be directed toward re-establishing these normal channels and supplying the air flow which is their physiologic complement. I believe every drug or physical agent that is used successfully in these infections is only successful insofar as it accomplishes these two inseparable purposes. Even the promotion of comfort depends largely on success in attaining these ends. A list of commonly used agents follows.

Irritants or stimulants include:

Camphor—mild local irritant

Menthol—irritant and analgesic

Organic silver compounds—local irritants

Tincture benzoin compound — analgesic, stimulant

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By irritation we mean any agent which causes an initial shrinkage of mucous membranes. The first two lose effectiveness because of a tendency to cause dryness, and a later edema. Organic silver compounds cause weeping of membranes and so aid in liquifying secretions.

Expectorants are:

Ipecac—irritant, expectorant, emetic

Alkalies

Iodides

They increase the watery secretion and liquify secretions. Ipecac may also, by causing emesis, effect a quick evacuation of larger airways.

Anti-spasmodics are:

Ephedrine

Adrenalin

Atropine

Phenobarbital group

Steam

The major effect is a widening of the airways. Atropine is harmful because it tends to inhibit the secretions. Steam is invaluable from the standpoint of liquifying secretions.

Vasoconstrictors are:

Ephedrine

Adrenalin

Cocaine

Ephedrine is the most useful because it stimulates ciliary activity and causes no secondary edema.

Sedatives and analgesias are:

Morphine

Codeine

Phenobarbitals

Salicylates

Morphine and codeine improve respiratory efficiency. Too large amounts dull pharyngeal sensation and prevent drainage by reflex cough. Mechanical aids are suction and posture, and are invaluable as a means of hastening drainage, particularly in the emergency of a laryngospasm.

Physical agents are:

Oxygen

Carbon dioxide—respiratory stimulant

Water

Heat, direct, or by radiation

The value of vaccine and foreign protein therapy is controversial, since their effects are uncertain and unreliable.

Antiseptics do not reach the infected areas. Efficient concentrations are not tolerated by the respiratory mucous membranes.

If we accept this list as being complete, and

accurate in its interpretation, we arrive at the following conclusions:

1. That with any or all of these agents we are unable to exert a specific effect against the offending organism.
2. That we are unable to obtain an antiseptic effect.
3. That we can:
  - a. Increase the lumen of the airway.
  - b. Increase or decrease the amount of secretions.
  - c. Decrease the viscosity of secretions.
  - d. Directly remove blocking secretions.
  - e. Hasten the movement of secretions.
  - f. Increase the general efficiency of respiration.
  - g. Increase the amount of available oxygen.

One of the most common problems in childhood is cervical adenitis with persistent temperature. Except in the case of actual gland suppuration one must view this adenitis, not as the cause of the temperature, but as the result of a focus which is not draining. Although this focus may be the tonsil, it usually is the nose. Careful examination will reveal a subacute sinusitis which will rapidly improve once active ventilation has been established. This same picture is frequently aggravated by an infected adenoid mass. Early removal of adenoid tissue will greatly shorten the course of the disease, and will provide the ventilation and drainage which are necessary if complicating otitis or chronic sinusitis is not to be the result.

I know of no respiratory infection which better illustrates the necessity of ventilation and drainage than spasmodic bronchitis. This disease, which in its onset has a superficial resemblance to beginning lobar pneumonia, may subside within a few hours if proper treatment is begun. Anti-spasmodics such as a combination of ephedrine and phenobarbital will increase ventilation by relaxing the bronchospasm. Alkalies and water in large amounts, by decreasing the viscosity of the secretions, will greatly hasten drainage. More obvious is the case of streptococcic pharyngitis with extension into the larynx and trachea. Many of these youngsters can be carried through without surgery if a vigorous effort is begun to decrease the viscosity of the secretion, and reduce the edema. Alkalies and antispasmodics will relax the spasm, and aid the movement of secretion, and at the same time reduce the forced respiratory effort which, through exhaustion, may cause death.

If, by repeating the phrase, "ventilation and drainage", even to the point of monotony, we be-



gin to think in such terms, we likewise begin to rationalize the management of these cases. We are less content to rely on agents which have a theoretic but doubtful specific effect on the offending organism. The refractory case seems less a puzzle if we think in terms of the area or areas that may be failing to drain and ventilate. This attitude forbids the use of any drug or appliance which may increase the viscosity of secretion, inhibit reflexes, or restrict respiratory excursion. It stimulates an appreciation of surgical indications. As this attitude brings awareness of the presence and location of obstruction it frees one from an inclination to rely too long on treatment which is ineffective. Ventilation and drainage must be obtained. It must be obtained by whatever means is necessary. Non-surgical treatment should be used and persisted in, if successful, but surgery should be employed early enough to be of value. No field in medical practice requires closer cooperation between the pediatricist and the surgeon. Adenoidectomy, antral drainage, endoscopy and unhurried tracheotomy are invaluable surgical additions to our list of agents which may increase ventilation and drainage. Properly employed at the proper time these maneuvers will greatly shorten the illness and may prevent serious complications or death.

STATISTICAL STUDY OF CASES SEEN  
IN THE ALLERGY CLINIC AT THE  
UNIVERSITY HOSPITAL\*  
1933-1934

JULIA COLE, M.D., Iowa City

An allergy clinic was established at the University Hospital in April, 1933. Previous to this time there had been no centralization of allergy work in the hospital, some skin testing having been done by individual departments. The present allergy service is maintained in connection with the medical out-patient department. Cases are referred by the various departments of the hospital and also by outside physicians. Every patient has received a general examination, either by the referring department or by the medical out-patient staff before being seen in the allergy clinic.

An allergy clinic in a hospital of the type of the University Hospital works under certain obvious handicaps both in diagnosis and in treatment. In all allergic conditions there are two diagnostic problems. One must first make a clinical diagnosis of the disease entity and following this, one must attempt to make an etiologic diagnosis. Most of the allergic diseases are intermittent in their mani-

festations. It is not uncommon for a patient to come to the University Hospital, giving a history of symptoms suggesting an allergic disease, and to remain entirely free of symptoms during his hospital stay. For this reason the fundamental clinical diagnosis cannot always be made with certainty. A second diagnostic difficulty is due to the fact that in many conditions suspected of being allergic there is lack of agreement among clinicians in regard to diagnostic criteria. This is true to some extent of migraine, of "gastro-intestinal allergy," of vasomotor rhinitis, and even of bronchial asthma.

After the clinical diagnosis has been made, further difficulties are met with in making the etiologic diagnosis. In many cases of allergic disease the specific etiology is discovered only after prolonged study. Sensitivity may or may not be demonstrated by skin tests and often it is necessary to supplement skin tests with eliminative regimes. Studies of this sort are best carried out by private physicians or by out-patient clinics where repeated contacts with patients are possible. At the University Hospital where the average hospital stay is probably ten days or less, it has been necessary to rely unduly on skin tests in diagnosing specific sensitivity.

Treatment offers related problems. Many patients, for example, show multiple food sensitivities with skin tests. Not all of the reacting foods may be of clinical importance and various types of eliminative regimes must be tried before a satisfactory diet is worked out. It is not possible, of course, to keep patients at the University Hospital long enough to observe the results of such eliminative regimes. This means that many patients are discharged with complicated dietary instructions, and results depend on their willingness and ability to carry out those instructions.

In view of the above facts it was felt that a study of the results secured in patients seen at the University Hospital would be of interest. This paper offers a brief survey of the work done by the allergy clinic during the first eighteen months of its existence. We were interested in showing, first, the number and type of cases referred to the clinic; second, the diagnoses made by the clinic; and third, the results of treatment.

Between April, 1933 and September, 1934, 624 cases were referred to the allergy clinic. Table I shows the tentative diagnoses which had been made by the referring department or physician. The staff of the allergy clinic considered that there was evidence to suggest an allergic etiology in 448 of these cases. In the remaining 176 cases we found basis for disagreement with the clinical diagnosis in many instances and in the others, al-

\* From the Department of Internal Medicine, State University of Iowa.

though we agreed with the clinical diagnosis, we were unable to demonstrate an allergic etiology. Of these 448 cases some were thought to be "definitely allergic" and others were considered "possibly allergic." The distribution of diagnoses as made in the allergy clinic is shown in Table 2. Only the 448 cases referred to above are considered in this table. The total number of diagnoses exceeds the total number of patients because in some cases more than one allergic disease was diagnosed in a single patient.

TABLE I

Bronchial asthma.....	175
Asthma and hay fever.....	53
Asthma and vasomotor rhinitis.....	14
Asthma and eczema.....	5
Asthma and angioneurotic edema.....	1
Vasomotor rhinitis.....	123
Hay fever.....	52
Hay fever and perennial rhinitis.....	11
Migraine.....	69
Eczema and other dermatitis.....	43
Urticaria.....	18
Gastro-intestinal upsets.....	14
Angioneurotic edema.....	12
Arthritis.....	6
Unexplained generalized edema.....	5
Miscellaneous:	23
Purpura.....	
Epilepsy.....	
Erythema nodosum, etc.....	
Total .....	624

TABLE II

Bronchial asthma, definitely allergic.....	146
Bronchial asthma, possibly allergic.....	60
Perennial rhinitis, allergic.....	53
Perennial rhinitis, possibly allergic.....	63
Hay fever.....	110
Migraine, allergic.....	12
Migraine, possibly allergic.....	21
Eczema, allergic.....	13
Eczema, possibly allergic.....	5
Dermatitis, allergic.....	3
Dermatitis, possibly allergic.....	10
Allergic hydrarthrosis.....	1
Conjunctivitis, possibly allergic.....	6
Urticaria, allergic.....	4
Urticaria, possibly allergic.....	12
Angioneurotic edema, allergic.....	4
Angioneurotic edema, possibly allergic.....	6
Gastro-intestinal upsets, possibly allergic.....	3
Purpura, possibly allergic.....	1
Total .....	533

The cases followed were the 448 allergic or possibly allergic ones. An attempt was made to contact each of these patients, either by personal interview or by letter. The method of contact was by letter in a large majority of cases as most of the patients coming to the University Hospital do not live in or near Iowa City. We realize that many patients who consider themselves improved within the first week or two after the institution of a new treatment subsequently see no real change in their

condition. For this reason no letters were written until at least two months had elapsed after the patient's examination in the clinic, and in most cases the time interval was six months or longer.

A personal letter was written in each case. In the letter the patient was reminded of the instructions which had been given him and was asked to answer the following type of questions: (1) Have you followed our instructions? In whole or in part? (2) Has your condition remained unchanged, improved, or grown worse? (3) Have you used any other form of treatment? If so, what?

Of the 448 cases, reports were received from 342 patients. From about one hundred of these two or more reports have been received. In most cases the statements which the patients made were clear and definite. In some, of course, the answers were too equivocal to permit of interpretation. In cases of food sensitivity the treatment prescribed was elimination of the suspected food from the diet. In sensitivity to epidermals avoidance of contact was advised. In hay fever and pollen asthma pollen injections were suggested. The results of treatment are summarized in Table 3.

Certain interesting facts were brought out by the study in addition to the summarized results. In many cases of hay fever and pollen asthma, although recommendations in regard to desensitization were made, the patients could not secure the injections, usually for financial reasons. Some of these patients gave positive skin reactions to foods and epidermals as well as to pollens. In some of these cases we recommended trial elimination of reacting foods and epidermals during the hay fever or asthma season. We made a similar recommendation to some patients who were able to secure pollen injections. We attempted to secure an expression of opinion from these patients as to whether or not this elimination was of any benefit to them.

Four patients with pollen asthma who were unable to secure pollen injections tried elimination of reacting foods and epidermals with resulting improvement in the asthma. Two patients noted no improvement. Three asthma patients secured pollen injections and also experimented with elimination of reacting foods and considered the elimination beneficial. Eight hay fever patients who received pollen injections felt that the elimination of reacting foods helped them. Nineteen hay fever patients who did not receive pollen injections were improved by the elimination of reacting foods and epidermals. Four noted no results from elimination. Some of the patients reporting good results from elimination were persons whom we contacted



TABLE 3

Diagnosis	Followed Treatment				Followed Treatment partially		Did not follow treatment		Improved but results not attributable to treatment	Results equivocal
	Improved			Not Improved	Improved	Not Improved	Improved	Not Improved		
	Much	Moderately	Slightly							
Perennial asthma (definitely allergic) . . . . .	43	15	14	14	3	3	0	11		10
Perennial asthma (possibly allergic) . . . . .	5	5	0	11	0	0	0	4		
Pollen asthma . . . . .	6	2	1	2	0	0	0	4		
Hay fever . . . . .	16	5	5	6	0	0	0	4		3
Perennial rhinitis (definitely allergic) . . . . .	21	4	1	6	1	0	0	3		
Perennial rhinitis (possibly allergic) . . . . .	8	5	2	9	0	0	0	5		8
Migraine (definitely allergic) . . . . .	3	1	0	2						
Migraine (possibly allergic) . . . . .	2	1	1	7					6	
Urticaria (definitely allergic) . . . . .	2	0	0	4						
Urticaria (possibly allergic) . . . . .	2	0	0	5						
Vernal conjunctivitis (possibly allergic) . . . . .	2	0	0	3					1	
Intermittent hydrarthrosis (possibly allergic) . . . . .	0	0	0	1						
Angioneurotic edema . . . . .	2	1	0	2						

frequently and whose observations seemed very accurate.

In other words, although some patients have purely seasonal symptoms and are undoubtedly sensitive to pollens, yet they are benefited by the elimination of foods and epidermals with which they come in contact the year round. We do not have any good explanation for these facts but we think that the results make it worthwhile to test cases of hay fever and seasonal asthma with foods and epidermals as well as with pollens.

No extended comment is necessary on the results summarized in Table 3. It seems obvious that even with unfavorable conditions for study, results in the treatment of allergic disease are encouraging.

HEADACHE: DIFFERENTIAL DIAGNOSIS IN PERIODIC TYPES\*

T. R. GITTINS, M.D., Sioux City

Differential diagnosis of headache is a long subject; twenty minutes is a relatively short time. This is not an orthodox paper as I have nothing new to offer in the diagnosis or treatment of head-

ache but wish rather to emphasize what should not be done in many instances. Headache is, of course, a purely subjective symptom and the type and severity must depend upon the individual patient's intelligence and ability to express himself. The term headache may be used to describe a real pain, a peculiar sensation or a psychic disturbance. At times it expresses a defense reaction and is used purely as a basis for claim in litigation. In order to limit the topic, I wish to discuss only the differential diagnosis of periodic headache in the ambulatory or ordinary office patient. I will have nothing to say then concerning that host of patients in whom headache appears as a symptom in a disease which is recognizable by objective findings, and self limiting by recovery or death in a relatively short time in proportion to the span of life. Headaches that appear in acute infectious diseases, meningitis, brain abscess or tumor, kidney lesions, high blood pressure, acute sinusitis and mastoiditis, glaucoma, iritis, etc., are not being considered. By eliminating this group our discussion is narrowed to a consideration of the patients in whom headache is the prominent symptom with few, or what is of more importance, often no objective findings to further a diagnosis. Such headaches may tend to recur at regular or irregular intervals over long periods or throughout life,

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and play no definite part in shortening the span of life. These patients in most instances carry on all their regular duties but have periods of marked discomfort.

Practically, this paper is now limited to a discussion of three types of headaches, viz.; the eye type, caused usually by a strain upon the ciliary or extra-ocular muscles; the nose type, caused possibly by positive or negative pressure in the nose or sinuses, or neuralgias of the sphenopalatine ganglion or fifth nerve; and the migraine or periodic allergic type, caused presumably by a vasomotor upset in the brain tissue or meninges. Migraine, periodic vasomotor, or allergic headache will be used interchangeably in this paper to indicate the same syndrome of which the main characteristics are the periodicity of the headache and associated phenomena, such as visual disturbances, paresthesias, aphasias, nausea, vomiting, etc., over comparatively long periods of time with intervals of good health, in a patient whose personal and family history indicates susceptibility to allergic conditions.

I wish to make it clear that the statements made in this paper are based mainly upon personal observations and many of them disagree essentially with those made by some of our real authorities. The subject of headache is too vast to attempt to quote from any authorities or to give a bibliography. The literature is replete with glowing descriptions of methods which have relieved periodic attacks of headache, but very little is said as to whether or not the treatment advised has prevented the recurrence of similar attacks. Listing from the literature the many causes of periodic headache and the treatment advised makes one realize that this is a subject closely related to hay fever and asthma in more ways than one. We all know that through the years various enthusiastic reports of procedures advocated to relieve or cure various allergic conditions have had to be discarded after sufficient time has elapsed to allow for the recurrence of the symptoms. It is this bug-bear of recurrence which hangs over us when any type of hereditary, vasomotor or allergic manifestation is being considered. If we will carefully list our patients who complain of the migraine type of headache we may find that just as many or more of them lose their symptoms *spontaneously* as those who receive any treatment or operation. There is no doubt that many of these spontaneous cures are credited to some treatment or operation because of coincidence rather than cause and effect. We know that most women lose their migraine at the time of the menopause. We know that others have the periodic upsets only during pregnancy, or are perhaps free

of the trouble only during that time. A fair number of patients insist that their periodic headache disappeared after they had some simple nose treatment or operation, or were fitted with glasses. Naturally, if we do not follow carefully great numbers of cases for long periods of time, we may credit some treatment or operation with the relief that came as a spontaneous change. I only ask that those of you who disagree with my statements, and I know many of you will, follow your cases more carefully over long periods of time. It is best to remember that patients with periodic headache of the migraine type usually have good health between the attacks and usually live a full span of life with ample time and opportunity to go from pillar to post, from physician to surgeon, and surgeon to quack.

To simplify further the classification of periodic headache in the ordinary ambulatory or office patients, let us divide them clinically into the *hereditary* and *acquired* types. If we can determine by a careful history that the patient in this group is suffering from a headache of an acquired type we can feel confident that our efforts at treatment will be reasonably successful. In other words, we can expect good results if the headache is due to obstruction and acute inflammation in the nose, infection of the sinuses, or definite eye strain. On the other hand, if we determine by the history that the headache is probably of an hereditary type and that means usually that it is of vasomotor or allergic origin, then we can feel sure that our efforts to obtain permanent relief will, as a rule, be unsuccessful. I feel that I cannot stress this hereditary feature too strongly because as yet we have found no way to change our inherited characteristics nor choose our ancestors. We do not expect any phenomenal results in the treatment of epilepsy, hemophilia or color blindness; therefore, we should not expect too much from the treatment of this other common hereditary condition, migraine. My main object in speaking today is to emphasize that though we may not be able to prove what is causing a certain periodic headache, we have a wonderful opportunity to rule out some of the conditions which are probably not causing it. Many diagnoses must be made by elimination but this elimination process can be carried out without subjecting the patient to unnecessary and ill-advised nasal or abdominal surgery. Countless pairs of glasses are fitted for periodic headache without a chance for relief, but here at least the patient experiences only a minor financial operation without any other distressing after effects. It is my experience that very little interest is shown by most physicians, especially if they have not had headache themselves, in a



patient who has migraine, probably because the sufferer is not considered seriously sick at any time and is so well between the attacks. The patient is considered uncomfortable but not ill and the physician is often not interested because there is so little objective evidence to explain the trouble. It is so easy to explain any type of pain or headache and associated phenomena as just *nervousness*, if objective evidence is lacking. Very often, it seems, the diagnosis of the cause of any particular type of periodic headache depends to a great extent upon the specialty of the physician consulted.

I will not attempt to give a detailed account of the theories for the mechanics or pathology of the production of headache. For all practical purposes it seems reasonable to explain headache as representing the reflex pain of *nerve end irritation*, or the effect of *pressure on or within the brain* by misplaced blood, serum or cerebrospinal fluid. Because of the apparent similarity of migraine to various allergic manifestations, it seems reasonable to assume that local tissue reactions in the brain substance, meninges, nerves or spinal cord, similar to the tissue reactions of urticaria or angioneurotic edema, may explain the regular progression of the headache and associated symptoms. We know there are nerves of sensation in the dura but there apparently are none in the pia or arachnoid. Stretching of the dura gives pain as can be easily demonstrated at operation.

For the purpose of differential diagnosis let us then think of the headache secondary to acute nasal and sinus congestion, eye strain, or neuralgias of the sphenopalatine ganglion or fifth nerve, as due to nerve end irritation, mechanical or toxic in origin, but with the real pathology external to the brain and the meninges. The actual headache then is reflex in nature. On the other hand let us think of the headache of the migraine or allergic type as due to changes in the volume of the brain substance, secondary to vasomotor disturbances within the brain itself or the meninges. In the differential diagnosis of the probable cause of periodic headache, it is of utmost importance to keep this distinction between the hereditary and acquired types constantly in mind. In actual clinical experience the headaches of the acquired type such as result from eye strain, sinus infection, intestinal toxemia, etc., never have any of the cortical symptoms such as scotomata, hemianopsias, paresthesias, or aphasias, and rarely have nausea and vomiting. Certainly they do not exhibit any definite periodicity or tendency to progress routinely through similar phases during each exacerbation.

As mentioned above, for the purpose of this

paper migraine, periodic vasomotor or allergic headache are terms used interchangeably. For the sake of emphasis and to refresh your memories, let us at this time list the characteristic symptoms of this type of hereditary vasomotor disturbance which are the same today as they have been for hundreds of years. This type of headache is characterized mainly by its periodicity over long intervals. The actual pain is often preceded by some visual phenomena, notably scotomata, which are dancing, zig-zag lines, hemianopsias which are losses of portions of the visual fields; and sometimes rather complete blurring of the entire vision. In the patient who has visual aura these cortical symptoms usually begin twenty to thirty minutes before the pain comes on as a unilateral expanding headache. In some individuals there will be paresthesias such as numbness of the hands, lips or tongue. Occasionally there is aphasia or a disturbance of the memory. As the pain becomes intense nausea and vomiting appear in a certain number of patients. Often the severe pain is relieved after the vomiting comes on. Perhaps this relief of pain is due to the dehydration of the water logged brain caused by the loss of fluids from vomiting. In some instances the headache and all its associated symptoms may disappear in a few hours, but in other instances there may be recurrence on successive days of the visual aura, pain, vomiting, etc. As a rule after the pain is gone, there is a feeling of languor and mental depression for twelve to twenty-four hours. Vertigo of a whirling type may accompany the headache or it may appear at times alone and seem to replace the usual migraine syndrome. There is usually no effect upon the hearing and usually no tinnitus, which symptoms usually do accompany the vertigo of a Meniere's symptom complex secondary to vascular disease. I want to emphasize that all of the above symptoms may appear in a typical case, but there are a great many patients who have only periodic headache without the other phenomena. Others may have only the scotomata or one of the other cortical symptoms with possibly mild pain and some nausea. No one of the individual symptoms is ever as typical as the periodicity of a certain number of them over long periods of time, and the regularity of the progression of the symptoms in a patient whose personal and family history suggests allergic or migraine possibilities. Certainly in some families hay fever, asthma, urticaria, eczema, etc., may be interchangeable with migraine or some type of allergic headache. The symptoms of migraine have been described in detail for many years and there is nothing new to offer from that given hundreds of years ago.

While preparing this paper I reviewed a paper on "Sick Head-Ake" given before one of our medical societies in 1797. In this description every detail of the clinical course of the disease was given just as we see it today. The treatment suggested in those days was no more bizarre in nature than that which has been suggested in more recent times. This author in 1797 claimed remarkable results in the permanent cure of migraine by giving patients from a gill to a pint of hard cider before breakfast each morning over long periods of time. Such treatment provokes mirth now but certainly it was much more agreeable to the patient than some of the ill-advised nasal and abdominal operations to which they have been subjected during more modern times. Stomach trouble and constipation have been so long blamed for sick headache that I know many patients and too many physicians will never believe otherwise. Constipation and stomach trouble may cause headache of a mild type in certain sluggish individuals, but it does not seem possible that either one could ever cause a real attack of migraine. The relief obtained after a laxative is misleading. The attacks are self limiting, and do not tend to last more than a day or two, so that they are often gone before a laxative could have much effect. Again salts lower the intracranial pressure and the headache may be relieved temporarily when this type of cathartic is used because of the dehydration. I feel quite sure that stomach trouble itself plays less part in causing headache than almost any other cause we may mention. If we must say that constipation and stomach trouble cause the migraine type of headache, then we must also explain why great numbers of people suffering from constipation and stomach trouble have no headache of any kind, let alone the definite periodic attacks with characteristic associated symptoms. We must also explain the complete lack of stomach and intestinal complaints in the migraine patient between the periodic upsets. As mentioned before, heredity plays the prominent part in determining the individual's susceptibility to headache of the migraine or allergic type. The periodic attacks may begin in early childhood and reappear during a life time; they may begin at any age and leave for no apparent reason; they may appear first at the time of puberty and disappear when the patient reaches adult life; they may appear first and only during pregnancy; or many times they may disappear during this time and appear at regular intervals before and after. From sixty years on it is rare for any patient to come to our offices with headache as a complaint although a great number of these older patients can tell of the

great suffering endured because of these periodic outbursts in their younger years.

Migraine is much more common in children than it is generally thought to be. Very little attention has been given to this subject in the textbooks on pediatrics or even in the current literature of this specialty. At the age of four or five the headache itself is often a minor symptom of the periodic attacks which begin with languor, loss of appetite, often some fever, abdominal discomfort and vomiting. The gastric disturbance in the young child is most marked and nothing may be said of the headache in these early years. As the child reaches the age of ten or twelve, the same gastro-intestinal upsets may continue to appear with headache beginning to be a more pronounced forerunner of the attacks.

It is very likely that in many instances the so-called *cyclic vomiting* in children represents the early stage of what becomes typical migraine in later years. Appendicitis is often the diagnosis in children especially during the first few attacks and undoubtedly many appendices have been and are being removed in the hope of relieving these periodic gastro-intestinal upsets. One author has estimated that there are probably a million children under twelve years of age in the United States suffering from migraine. Another article states that approximately seven per cent of the people of this country have migraine sometime in their lives and about thirty per cent of all migraine sufferers manifest symptoms before ten years of age. Another article estimates that two per cent of all children show symptoms of migraine during the first years of life.

I wish to make the point as clear as possible that in this type of periodic vasomotor headache which is now under discussion a careful *history* is of much more positive value in differential diagnosis than an equally careful *physical examination*. A complete and painstaking examination may produce so much objective evidence that the diagnosis of the actual type of the headache and its cause is confused rather than clarified if a careful history is not obtained. Many patients color their history to satisfy preconceived ideas of what they think is causing the headache or they may repeat parrot-like, impressions obtained from some previous examination. Many patients are not able to give an accurate explanation of their complaints and seem to resent too much questioning. They are much impressed by the physician who can tell what the trouble is after a very short examination and very few questions. We may increase our ability to interpret objective evidence in the nose or on the x-ray plate or after refraction, but we still have to extract the history from the



patient in the same slow manner that we have always had to use. In other words, the patients' ability to define their symptoms and express themselves does not improve along with the improvement in the diagnosis of objective findings.

As a rule the headache due to pathology in the nose and sinuses should not offer any particular difficulty in differential diagnosis. I must admit that much unnecessary nasal and sinus operative work has been done because some nasal obstruction or sinus pathology happened to be present in the patient who also had periodic vasomotor headache. Because acute sinus infections do produce headache, there has been a tendency to attach too much importance to rather harmless changes in the sinus membranes as evidenced by positive x-ray findings. A headache of nasal or sinus origin is always preceded by acute rhinitis with some of its characteristic symptoms of sneezing, poor nasal breathing, nasal discharge, loss of smell, or change of resonance of the voice. A patient may have headache because of a deflected septum and enlarged turbinates, but this headache comes only as a result of pressure during an acute nasal inflammation. Patients with any type of periodic vasomotor headache will usually have relief temporarily when the nasal membranes are treated with cocaine and adrenalin or subjected to any insult. We know that most of the venous blood from the upper portion of the nose goes through the cribriform plate and then along the floor of the skull to the cavernous sinus. It is only reasonable to expect some vasomotor changes to be set up inside the brain or meninges when the vessels and nerves of the nasal mucosa are stimulated by treatment or operation. All operations and many forms of treatment may be considered as "shock therapy" and we all know how remarkably any allergic or vasomotor condition may respond temporarily to any insult to the nervous system. Many a submucous resection is done or turbinates trimmed with the hopes of giving permanent relief of periodic headache simply because shrinking the nasal membranes gives some temporary relief during an acute attack. On the other hand, patients with the most marked obstructions in their noses rarely come to us with the complaint of headache, but rather because of the difficult breathing or frequent, long drawn out nasal infections. There is absolutely no reason why the headache of acute sinus infection should ever be confused with that of the periodic vasomotor or migraine type. The associated nasal symptoms are so typical that mistakes should not be made.

In the everyday practice of otolaryngology it is remarkable how seldom headache is an impor-

tant complaint in a patient with real chronic sinus infection. As a rule these patients come to us complaining of many other symptoms but rarely do they mention headache prominently, except as it appears during an acute nasal exacerbation. We see these patients usually because of difficult breathing, discharge from the nose and into the throat, chronic cough, asthma and other general conditions. So many people have nasal and sinus pathology and so many also have migraine that it is only reasonable that much confusion has resulted when a careful history has not been taken or given sufficient importance. I wish to repeat again that in the diagnosis of nasal and sinus conditions as the probable cause of headache we have plenty of objective evidence and typical symptoms, while in the diagnosis of periodic vasomotor headache of the migraine type we have only the history to depend upon.

The many migraine patients, whose septa have been straightened, turbinates trimmed or sinuses drained without relief of their symptoms, are anything but boosters for sinus surgery in general. Technically sinus and nasal surgery has improved rapidly and surely to a high position beside the surgery of the other specialties, but we must admit that it now stands much discredited in the minds of many patients and physicians. Diagnosis is at fault, not the surgery of this region, and when our present nasal surgical procedures are reserved and used for properly diagnosed conditions then will their real merit be recognized and their real value be properly appraised. The migraine or periodic allergic headache patients are usually intelligent individuals who are so anxious for relief that they will grasp at any likely straw. Especially is this true in nasal work, because they are so encouraged by the temporary relief of the acute pain obtained by cocaineizing the nasal mucosa. They then are willing victims for surgical work just as they are when the appendix, gallbladder or pelvic organs are accused of producing toxemia or reflex pains and associated symptoms.

I wish to mention in passing that most of the patients who go through their daily business or social life complaining periodically of "sinus headaches" are really having vasomotor disturbances within the brain substance instead of infection or pressure within the sinuses. If they had real sinus headaches they would not be perfectly well after only a day or two of discomfort with no evidence of infection.

Headache is of course very commonly caused by nerve end irritation secondary to strain on the ciliary or extra-ocular muscles. Here again the history suggests that the pain comes in relation to use of the eyes. The headache comes on

as a rule later in the day after the patient has done close work or has been exposed to some distance strain, as in driving, and is usually associated with a tired feeling in the eyes or burning and smarting of the lids. Eye strain headache is relieved by resting the eyes and is rarely present early in the morning unless the patient reads late at night. In contrast, the headache of the migraine type is commonly present on awakening after a good night's rest with no relation to eye work. The headache that occurs after a ride in an automobile may be thought to be due to eye strain when a short history will suggest that excitement and nervous strain are responsible for a vasomotor upset. Many people have a congestive headache as the result of the emotional upset and not the eye strain of watching a moving picture. The headache of eye strain is periodic but the periodicity is dependent upon the use of the eyes and relief is obtained consistently by resting them.

Most patients with any type of headache will usually have been fitted with glasses regardless of whether or not the history is suggestive of eye strain. Practically no one will show a normal refraction or normal extra-ocular muscle balance, therefore the fact that the patient is wearing glasses may mean nothing. So many poorly trained individuals do refractions that a number of sufferers of ordinary eye strain get no more relief from their glasses than do the migraine victims. The best test as to whether or not eye strain is causing headache is a proper refraction and the wearing of the proper correction. I wish to emphasize this because so many medical men fail to demand a real refraction of the headache patient although they have gone to great pains to make a complete and scientific general physical examination. The proper way to rule out the eyes in a headache patient is to measure the refractive error under a cycloplegic, especially in children and young people. Many purely eye strain headache people pass unrecognized through the hands of medical men because they are already wearing glasses, while the glasses they have may do no good and some harm. Thousands of patients are wearing glasses who do not need them; thousands are wearing improper lenses; and thousands of others are suffering from headache and other troubles because a proper refraction has not been done. Commonly, unrelieved eye strain is a prominent trigger in making a migraine patient more uncomfortable and possibly does play a part in initiating some of their attacks. Proper lenses to correct astigmatic and possibly extra-ocular muscle errors are of great importance in helping the migraine patient, although of course

they cannot prevent the periodic vasomotor upsets in the brain.

#### SUMMARY

1. Differential diagnosis of the causes of periodic headache in the ambulatory or office patient is considered in this paper. We are especially concerned today with the patient in whom headache is the prominent symptom with little or perhaps no objective evidence to further a diagnosis.

2. Headache when it appears as an incidental symptom in a disease with prominent other symptoms and physical findings is not under consideration.

3. Migraine, periodic vasomotor, or allergic headaches are used interchangeably in this paper to represent a syndrome characterized by periodic attacks of headache over comparatively long periods of time with normal health between the attacks. The actual head pain is often preceded by visual aura and often accompanied by paresthesias, aphasia, nausea and vomiting. These periodic upsets usually appear in the patient whose personal or family history suggests susceptibility to allergic manifestations.

4. These periodic vasomotor or allergic attacks are very common and continually confuse differential diagnosis. The head pain and visual disturbances are often wrongly assumed to be the result of eye strain, nasal or sinus pathology. The nausea, vomiting and other gastro-intestinal symptoms are commonly erroneously traced to appendicitis, gallbladder disease, or stomach and intestinal trouble.

5. Migraine is much more common in children than it is generally thought to be. In the younger years the gastro-intestinal symptoms are much more prominent than the headache and the cortical phenomena, but the periodicity of the attacks with intervals of good health are typical. Fever, even to high levels is fairly common.

6. History is of greatest importance in the differential diagnosis of periodic headache. It alone often makes the diagnosis positive in these hereditary vasomotor disturbances. Objective evidence brought out by physical, laboratory or x-ray examinations may tend to confuse the diagnosis if the history is not given the proper consideration.

7. The correct diagnosis of the cause of headache in acute sinus disease should offer no difficulties. Physical findings are typical and with a careful history no confusion should result. Rarely does nasal pathology produce severe headache unless there is an acute sinus condition superimposed. This holds for obstructions due to deformities of the septum and turbinates and even for severe chronic sinusitis. Many unnecessary nasal and



sinus operations are advised and done because the above factors are not given proper consideration.

8. Appendices and gallbladders are removed and pelvic operations are done all too frequently because of the erroneous belief that the vomiting and other gastro-intestinal symptoms, so common in the vasomotor or allergic up-sets in the brain, may be due to toxic or reflex effects from infection in these abdominal organs.

9. Eye strain is a common cause of headache but here again the history practically makes the diagnosis and differentiates this type of head pain from the periodic vasomotor type. Eye strain may be the trigger which initiates a vasomotor headache or makes it worse, but it certainly cannot be the real cause. Proper refraction is essential in helping these migraine patients.

10. Treatment of periodic headache has not been discussed. Personally I am glad to leave the treatment of migraine and similar periodic vasomotor headaches in the hands of you general medical men where it belongs, but I do ask that you accept your responsibility and help us who are practicing the head specialties to concentrate on our own immediate problems. Certainly migraine and allergic headache patients should often have nasal obstructions removed, sinuses drained, glasses fitted, appendices and gallbladders removed, and various treatments given, but only when there are sufficient reasons for doing these things, regardless of the vasomotor or allergic syndrome and not because of it.

#### CONCLUSION

Migraine and similar periodic vasomotor or allergic disturbances of the brain, meninges, spinal cord or peripheral nerves are very common conditions and probably will continue to be with us as long as hereditary characteristics are perpetuated by intermarriage. Let us then be honest with ourselves and our patients, and honesty is not pessimism, admit our difficulties in controlling these hereditary conditions, continue to make conscientious scientific investigations, but in the meantime let us save our patients unnecessary and ill-advised treatments and operations which clinical experience and common sense have shown do not offer a reasonable chance for permanent relief from recurrence of these periodic upsets.

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#### Discussion

Dr. C. Van Epps, Iowa City: I am glad to open the discussion on Dr. Gittins' paper because I thoroughly agree with all he has so clearly and concisely

said. To me the paper is exceptional because, although Dr. Gittins is an expert in the head specialties, he has handled the subject as an internist would.

In his discussion of migraine Dr. Gittins has stressed three points; the history, the absence of objective findings, and the failure of local treatment to effect a cure. This is in contrast to the usual method in the head specialties. Because of the nature of their work, that is, the possibility of direct visual examination of most of the lesions, they feel that they can dispense with a detailed history. The same thing is true in other specialties where the lesions are open to direct examination. Dr. Gittins, however, has not been content to stop at this point and no doubt due to this attitude, he is seeing difficult cases, which, ordinarily would not be seen by an expert in the head specialties. He has been delving into the histories of these cases in detail and by a careful analysis and the results of various forms of treatment come to conclusions similar to those of the neurologist who perhaps sees more of these cases than anyone. Such an example should be very helpful both to his confreres in his speciality and to the general practitioner who refers patients to him.

It is unnecessary for me to review other than briefly the details of Dr. Gittins' paper: He has stressed the importance of heredity, periodicity, chronicity, absence of objective signs and the futility of much of the radical forms of treatment. I would like to stress the point that a specialist should first of all have a broad conception of medicine so that his enthusiasm in a speciality does not warp him and often make him dangerous. The fault does not all lie with the specialist. The general practitioner, having exhausted all the means at his disposal, finally refers the patient to some one, often with unwise promises. The specialist may feel almost duty bound to adopt radical measures.

Dr. Gittins uses synonymously the terms, migraine, vasomotor or allergic headache. There would seem to be no doubt that the essential lesion is vasomotor. In spite of many enthusiastic reports by others we have little reason to be cheerful over the results of anti-allergic treatment in our cases.

Dr. Caryl L. Nelson, Waterloo. A discussion of the paper that has so thoroughly covered the subject of headache as Dr. Gittins' must of necessity be, to a certain extent, purely reiteration.

I think that Dr. Gittins has rather unjustly criticized his colleagues for the many operations and the many refractions that have been done for cases with chronic, periodic headaches, because I can recall that up to within the past few years the general practitioner never referred these cases to the eye, ear, nose and throat man until he was at his wit's end, and, not knowing what else to do for him, perhaps he even persuaded the nose specialist to perform a nasal operation with the possibility that it might relieve a periodic headache.

As the author has pointed out, we must consider migraine disease as a disease entity having manifestations on the physiologic rather than on the ana-

tomic side. The diagnosis, therefore, is only made on symptoms and not on signs. Migraine, as I understand it, and as the term is commonly used, includes all types of recurrent headaches, familial in nature and with no demonstrative organic lesion. While I believe migraine is due to allergy in many cases, I still cannot feel that this warrants the assumption that it is truly an allergic disease.

We have been late in recognizing the fact that the only successful means of differentiating migraine is by careful and accurate history, whether you are in the specialty or whether you are a general practitioner, and I think you will agree, too, that in the past several years more cases are being referred by the eye, ear, nose and throat man to the general practitioner because of headache, than ever before.

If you will take your case histories and analyze them, you will discover that there is one element in common to all which agrees with the present tendency of many to feel that migraine is vasomotor in origin, that it is, in a sense, a periodic sensory discharge just as epilepsy is a periodic motor discharge. As a result I cannot feel that the periodic menstrual headache or the other endocrine headaches due to perhaps thyroid or pituitary dyscrasias, the fatigue neuroses or some of the other types of migraine are all on an allergic basis.

If all cases of migraine are due to allergy, then I feel that perhaps some of these cases exhibiting the same symptoms should be classed as pseudo in character.

#### COMPLICATIONS OF SPECIFIC URETHRITIS\*

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The complications of specific urethritis, that is, gonorrheal urethritis, are many and varied. It is these complications that require the skill and persistence on the part of the patient and the physician, before a cure can be effected. It has been variously estimated that complications in one form or another take place in from seventy to ninety per cent of the cases of specific urethritis. That specific urethritis is improperly treated is evident by the foregoing statement. Since about ninety-five per cent of specific urethritis is treated by general practitioners some would lay the blame at their feet; however, this is not true as there are as many urologists, proportionately, treating specific urethritis inadequately as there are general practitioners.

It is then to the prevention of these complications that we must direct our attention. Figure 1 will familiarize us with the anatomy of the lower genito-urinary tract in the male. From this we note that the area below the external

sphincter, or anterior urethra, is relatively free from complicating factors. The portion proximal to the external sphincter is the danger zone. It is here that the prostatic ducts as well as the ejaculatory ducts empty into the urethra, and once infected become a source of trouble to both patient and physician.

I am not going into the treatment of anterior urethritis, except to list a few of the most important things which I consider improper treatment leading directly or indirectly to one or more of the complications of specific urethritis. Factors causing the complications may be divided into those due to the patient and those due to the physician. Of those arising from the patient himself the use of alcohol and sexual excitement in any form are the most notable. Violent exercise and anything that tends to lower the bodily resistance of the patient are causative factors in a small percentage of cases. Another very definite cause of complications brought on by the patient is self medication, many times through the advice of the druggist friend without the proper instruction. How many times have patients been given a prescription for a certain drug and a urethral syringe, with the instruction to use it after each urination. The common practice is for the patient to get the prescription filled, to buy a syringe, anywhere from a 1/8 to one ounce one, and fill it with the medicine. They then inject the entire content of the syringe into the urethra, forcing the infection back into the prostatic urethra. They had received no instruction whatever as to the amount of medicine to use, the proper method of instilling the drug, and the length of time to hold the drug in the urethra. By referring to Figure 1 we will see exactly what happens. The organisms are forced past the external sphincter into the posterior urethra, ejaculatory ducts, and prostatic urethra. This then prepares the soil properly for an epididymitis, prostatitis, or seminal vesiculitis.

As for the physician himself the worst criticism is that of too enthusiastic treatment. Instillations are used which are too irritating, and oftentimes an astringent is used which sears the organisms in the mucosa causing a latent infection. Intravesical irrigations during the acute state and also urethral irrigations with the irrigator more than three feet above the level of the urethra are to be condemned. In the past urethral suppositories containing any of several antiseptics were used; fortunately the damage caused by them was recognized and they are no longer available. The passage of any instrument, or rubber catheter, into the acutely inflamed urethra is unnecessary and harmful. The usage of gonorrheal vaccines, espe-

\* Presented before the Eighty-fourth Annual Session, Iowa State Medical Society, Davenport, May 8, 9, 10, 1935.



cially in large doses, is responsible for a certain percentage of complications.

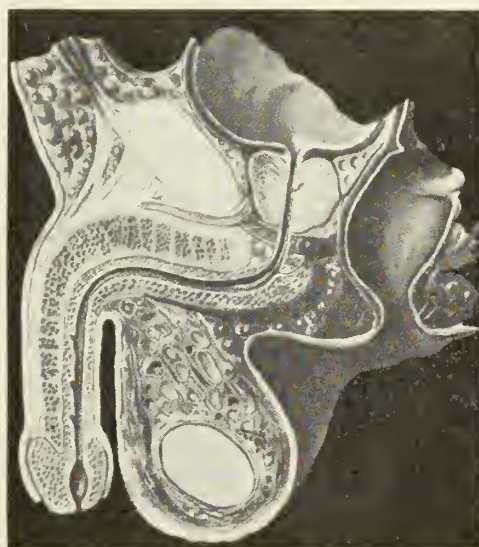
Time will not permit a complete discussion of all of the complications, so only the more common ones will be discussed.

Phimosis and paraphimosis usually give only a small amount of trouble to both the physician and patient. As a rule the application of heat and cleanliness on the part of the patient will take care of these two conditions satisfactorily. In phimosis with a tight prepuce it will be necessary occasionally to make a dorsal slit. No more than a dorsal slit should be attempted during the acute stage of the disease. Following the subsidence of the acute urethritis a complete circumcision may be done. In a few cases of paraphimosis, brought on by retraction of the prepuce, reduction of the prepuce over the glans will suffice.

Acute posterior urethritis is one complication of which the patient and physician should always be aware, and at the first sign all treatment by the urethra should be discontinued. The etiologic factors may be any of those before mentioned. It is characterized by the sudden onset of vesical irritation, in the form of burning and smarting on urination, frequency which may be quite marked, every fifteen to twenty minutes day and night. Terminal hematuria may or may not be present. At the first indication of a posterior urethritis all medication by way of the urethra should be discontinued immediately. Absolutely no urethral instrumentation is permissible. The patient should be encouraged to drink large quantities of fluids and should not try to hold the urine any longer than it is necessary. Nature has foreseen the dangers of increased intravesical tension, and has caused frequent urinations. Sedatives will do much to allay the frequency and associated discomfort. Urinary antiseptics by mouth will aid in clearing up the acute condition. As soon as the vesical irritation has subsided then a return to urethral medication is indicated. As soon as the urethral discharge has ceased investigation of the prostate should be made, and smears of the prostatic secretion made to determine whether or not the prostate has become infected. More times than not a prostatic infection will be found.

Gonorrheal infections of the prostate is the most frequent complication seen, either acute or chronic. An acute prostatitis should always be suspected when the patient comes into the office and says, "Doctor, I'm cured, my discharge suddenly stopped and there is none there now." When a profuse urethral discharge suddenly stops there is danger ahead. This means that there is enough

edema present so that proper drainage is prevented. About twelve hours after the cessation of the discharge vesical irritation will start in the form of frequency, burning and smarting, and there may be some difficulty in voiding. Occasionally there will be enough edema of the prostate present to cause an actual acute and complete retention of urine. There may or may not be a slight urethral discharge, throbbing pain in the rectum and occasionally a constant desire to defecate. Many patients complain of pain when sitting on a hard chair, saying that when they do it feels as though there is an orange in the rectum. There is usually a general feeling of malaise and a rise in temperature. Again all medication by way of the urethra



should be discontinued. Hot rectal douches, or rectal heat by psychrophore or diathermy, once or twice a day, will greatly relieve the pain. Rectal palpation of the prostate, as well as rectal instrumentation for the application of heat, should be done with the utmost gentleness and care, because any undue trauma may cause abscess formation. Sedatives by mouth, urinary antiseptics by mouth and symptomatic treatment is all that is indicated. Calcium gluconate by mouth, intramuscularly or intravenously, will be beneficial in some cases. With the formation of a frank abscess, surgical drainage through the perineum should be instituted at once. However, abscess formation due to the gonococcus is the exception rather than the rule.

With the subsidence of the acute stage it is safe to return to urethral medication, since an increase in the amount of urethral discharge usually follows the acute prostatitis. All medication

to the urethra should be done by the physician because if care is not taken and gentleness not exercised an exacerbation of the acute stage may take place or an acute epididymitis may follow. As soon as the urethral discharge has ceased and the prostate for all practical purposes is quiescent or chronic, as you choose to call it, prostatic massage should be started very gently. In most instances at the onset this massage should be twice a week, certainly no oftener. Gradually, using smears as the indication of progress, this massage may be decreased to once a week, then every two weeks, etc., until the prostatic secretion is normal. Many of these patients will always have a few more pus cells in their prostatic secretion than normal. During the chronic stage of the prostatitis it has been our custom to use the Valentine irrigations, although I am beginning to doubt the value of them. At the present time I am alternating cases with massage and Valentine irrigations, and massage alone. So far, I have been unable to see any difference in the progress in the two types of treatment. The patients getting massage alone seem to respond as well as those getting both massage and irrigations.

With the advent of transurethral surgery of the prostate there has been some agitation in the direction of transurethral resection on these chronically infected prostates, the aim being to provide better drainage through surgery of this type. However, for the average case of chronic prostatitis I cannot see that it will be of aid. There will be, however, a few cases in which this type of surgery will be indicated. A prostatic abscess as determined by rectal palpation should be drained surgically through the perineum.

Seminal vesical infection is one of the controversial subjects, as to diagnosis. If we are to accept the dictum that any seminal vesical which is palpable is infected, we will be treating many cases for seminal vesiculitis when there is only a prostatitis present. Many tests have been devised for a diagnosis of seminal vesiculitis, such as fractional prostatic massage, seminal massage, and fractional urination. However, whether or not there is infection present in the vesical seems to be beside the question, because the treatment is the same, namely, massage. In a certain small percentage of cases where there is no question as to the diagnosis of seminal infection, with a large indurated vesical, and where the usual course of massage gets no results a vasotomy with the injection of one of the mild silver salts into the seminal vesical directly by way of the vas deferens will sometimes give brilliant results. There may be a few rare instances of fulminating infection of the

vesical where radical surgical drainage will be indicated.

Sexual hygiene in chronic prostatitis is of great importance. An ejaculation is the best means by which to empty the seminal vesicals and prostate of its entire contents. I believe that coitus in the chronic case of prostatitis or seminal vesiculitis has a very beneficial result. This of course applies only to those who are beyond the infectious period, and who have had not only three but many negative smears, for the gonococcus. This applies especially to those patients who still have a morning discharge and pus cells in the prostatic secretion. Many of these patients if allowed to return to their normal sex habits will show marked improvement.

Acute gonorrheal epididymitis may be suspected when there is sudden cessation of the urethral discharge, just as in acute prostatitis. We are all familiar with the clinical picture of this condition. The painful swollen, throbbing enlarged epididymis, fever and general malaise. It is again the result of infectious material getting beyond the external sphincter into the posterior urethra and ejaculatory ducts. Ice in the early stages may abort the attack. With a full blown epididymitis, heat in the form of constant hot moist packs, or diathermy, will in most instances give better results. Calcium gluconate, in five gram doses three times a day will cause more rapid resolution and relieve the pain and tension. In some cases intravenous or intramuscular calcium gluconate in addition to its oral administration is of distinct value.

I am not in accord with routine surgical drainage of these cases of acute epididymitis. The idea that surgical drainage is provided sounds very well, but to get it is another thing. Most cases drained in this manner will drain a small amount of serous pus for a few hours and then seal over again. Also, the dangers of hydrocele formation are increased. I believe that the danger of sterility, due to scarring from surgery, is more marked.

Frank suppuration of the epididymis as evidenced by softening and a point of fluctuation will be present in a few cases. Aspiration with a needle will indicate easily and quickly whether drainage should be attempted. With frank pus obtained in the aspirating syringe drainage should be instituted at once; but, here again, frank suppuration due to the gonococcus is the exception rather than the rule.

I have purposely left the newer forms of heat therapy out of this discussion because I feel that they are still in the experimental stage. As to



just what place they will find in the treatment of these complications, time alone will tell.

Iowa State Bank Building.

## PURPURA COMPLICATED BY CEREBRAL HEMORRHAGE AND GANGRENE OF THE LOWER EXTREMITIES

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The complication of gangrene following purpura is distinctly unusual, as an exhaustive study of the literature will prove. For this reason I am prompted to report in detail the following case history. L. S., a male child, three years of age, was brought to the hospital February 27, 1934, with the following history:

Two weeks previous to entry, he complained of a little soreness in the throat, and the parents noted a definite swelling of the submaxillary glands on either side. The child continued up, and in two or three days seemed to be perfectly well. He then became restless, lost strength, and an increasing pallor became apparent. About one week later an evening fever was noted. On the afternoon prior to admission he became quite ill and was bed-fast. That evening a purplish discoloration of the right great toe was noted with no antecedent history of injury. Pain became severe and the child complained all night. By the following morning the discoloration had spread to involve the distal half of the right foot. A few hours later a purpuric spot appeared on the calf of the right leg and increased rapidly in size. In twelve hours a similar area appeared on the calf of the left leg, and by evening the great toe showed a purplish discoloration. By this time the child seemed extremely ill, delirious and in a semistupor. He was then admitted to the hospital.

On careful questioning of the parents the past history seemed entirely negative. He had apparently escaped even the ordinary childhood diseases. The dietary program was usual in a family of German extraction of very moderate finances. He had never had cod liver oil or orange juice, but had always been in good health and of normal activity before the present illness.

Physical examination on admission revealed a normally developed boy, extremely restless, with a marked pallor. His temperature was 100 degrees, pulse, 138, and respirations, 32 per minute. The pupils were widely dilated, but reacting normally to light. The ear canals and drum membrane appeared normal. There was no nasal discharge and an examination of the throat revealed only a slightly reddened pharyngeal wall. Both submaxillary glands were the size of bantam eggs,

very firm, and extremely painful. No stiffness of the neck was elicited. Examination of the chest revealed no abnormalities. The heart rate was 138 and the blood pressure 90/54. Abdominal examination revealed only slight distention, with tenderness, and no solid organs were felt. A purpuric patch was apparent over the right half of the scrotum. The spine seemed normal. Examination of the extremities revealed a large hemorrhagic patch over the lateral aspect of the thigh. Both calves showed a purpuric discoloration, and there was considerable tenderness over this area. The distal half of the right foot was purplish blue in color with a rather definite line of demarcation.

Laboratory examinations on admission were as follows: red blood count, 2,890,000; white blood



Fig. 1. Picture taken on the first day of admission showing purpuric area on legs and thigh.

count, 3,650; hemoglobin, 50 per cent; polymorphonuclears, 35; and small lymphocytes, 65. The smear showed only secondary anemia. Platelets were so few in number that only a very rough estimate of 15,000 was possible. Urinalysis showed acid, a specific gravity of 1.027, a trace of albumin, sugar negative, acetone negative and an occasional pus cell. Two blood cultures were negative.

Course and treatment: Because of the extreme restlessness and apparent pain the child was kept under the influence of phenobarbital and codeine. The limb was placed under an electric light cradle. On the third hospital day large blebs appeared on the hemorrhagic area of the calves and feet, but the purpuric patch on the scrotum and thigh began to fade. The large blebs were aspirated and a serous fluid obtained. At this time it was apparent that a true gangrene was established. The temperature ranged between 99 and 101 degrees,

with the pulse around 140. Dry dressings were applied over the limbs until the stench became so marked on the seventh day that wet dressings with Dakin's solution were instituted. At this same time 150 c.c. of blood were given the child, and his general condition was temporarily improved. He took nourishment well and also considerable fluids during the entire illness. On March 13, two weeks following admission, the child had a sudden convulsive seizure involving the entire body, with lateral nystagmus to the left. Six hours later it was apparent that the boy had a complete flaccid paralysis involving the entire right side of the body with the exception of the face. This paralysis remained complete for four days, when it gradually began to clear, although the lateral nystagmus persisted for about two weeks. Intelligent speech was not regained for almost two months. A lumbar puncture was not done at this time. The platelet count revealed about 20,000



Fig. II. Close up view of purpuric areas.

immediately following the cerebral accident, and two more blood transfusions of 150 c.c. each were given on succeeding days.

A firm hard necrotic shell had formed over the calves of the legs by this time, and in separating left a raw granulating area beneath. The toes of the right foot began to slough and the dressings were changed until the toes spontaneously amputated at the end of five weeks. The patient's general condition gradually improved. He took nourishment well, which for the most part consisted of orange juice, broths and milk.

By the sixth week of his illness he was able to sit up and only a slight residual weakness was noted in the right arm and leg. Speech returned slowly and at this time the child enunciates clearly and intelligently. The calves of both legs show a firm scar tissue. The left toe came off clearly at the first phalangeal joint and is completely healed. The point of amputation of the right foot is healing with a healthy granulation tissue.

The blood examination of this child is interesting because of the definite leukopenia on admission. This persisted during the illness except for transient rises following the transfusions.



Fig. III. Note slough beginning on posterior aspect right leg.

Urinalysis was not remarkable except for a slight trace of albumin.



Fig. IV. Hard necrotic shell over purpuric areas which later sloughed.



Date	White Blood Count	Red Blood Count	Hemoglobin	Differential		Platelets
2-27-34	3650	2,890,000	50%	polymorphonuclears 35	lymphocytes 65	0-10,000
2-28-34	3350			polymorphonuclears 41	lymphocytes 59	
3-5-34	6250					
3-6-34		Transfusion				
3-7-34	5300	2,450,000	50%	polymorphonuclears 70	lymphocytes 30	40,000 to 80,000
3-10-34	7200	2,160,000	45%	polymorphonuclears 67	lymphocytes 33	20,000 to 40,000
3-15-34	9250			polymorphonuclears 69		
				eosinophils	lymphocytes 30	20,000 to 40,000

At this writing the child is up and about and able to walk satisfactorily. Mentality and speech seem normal. The red blood count is 3,980,000; the white blood count, 4,800; hemoglobin, 70 per cent; polymorphonuclears, 68; small monocytes, 24, and large monocytes, 8.

Because of the known rarity of these cases a rather searching review of the literature was

eight months of age, also followed by gangrene; and Parker a case of purpura with nephritis and sloughing of the skin in a child eight years of age.

The pathology in these cases is not well worked out. Some report a thrombosis of the arteries, others of the veins and in some, no evidence of vascular changes at all. The mortality is naturally extremely high, ranging around fifty per cent.

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HYPOTHYROIDISM IN PREGNANCY

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During the last few years a great deal of work has appeared in the literature about hypothyroidism and its relation to sterility, but very little has been written concerning the prenatal care of a patient who has hypothyroidism. It is not my intention to discuss hypothyroidism in general, but to point out its particular relationship to pregnancy and the newborn, and to outline briefly the prenatal care of these patients.

Pregnant women who have hypothyroidism frequently abort, miscarry or are delivered prematurely of a stillborn baby. If they progress to term and are delivered of a live baby, the baby often presents evidences of cretinism or goiter. These conditions may not manifest themselves in the offspring at birth, but appear later in some form of thyroid dysfunction. Witts, Davis, Frazier, Ulrich, and Brown have stressed this fact in



Fig. V. Three weeks after admission showing demarcation established. (Mercurochrome on legs.)

undertaken. The last report is made by Dick, Miller and Edmondson' in which fifteen cases were found in the literature and added to their own. The majority of them followed a typical scarlet fever.

Lipes<sup>2</sup> as early as 1900 presented a review of the cause of gangrene following infectious diseases. Of those in the literature which very closely resemble this one I have presented is one given by Micheal in which gangrene of the fingers followed an acute upper respiratory infection. Adenitis was present as in our case but the white blood count was elevated to 20,000. Beinhauer reports a case of spontaneous purpura with no antecedent history of infection in a child, twenty-

previous articles. The metabolic rate of the normal pregnant woman increases during pregnancy. The normal increase varies between 15 and 30 per cent, the greatest increase occurring in the latter months of pregnancy. In hypothyroidism the amount of decrease in the metabolic rate corresponds roughly to the severity of the hypothyroidism, and is also most marked during the latter months of pregnancy.

Mild or moderately severe cases of hypothyroidism are easily missed unless one is constantly on the lookout for evidences of this abnormality. It is therefore important to keep this condition in mind and to get a detailed history from the prospective mother when she first presents herself for prenatal care. If there is any suspicion of subnormal activity of the thyroid gland, this suspicion should be clarified by further studies, including laboratory examinations. Once a diagnosis of hypothyroidism is established in a pregnant woman, she should receive careful supervision throughout her pregnancy. A large majority of these women can be carried to term successfully and be delivered of normal infants by the administration of thyroid extract or thyroxin during their pregnancy. The administration of thyroid extract should be controlled as far as possible by frequent metabolism tests and by close observation of the patient. Due to the fact that the blood pressure, pulse rate, weight, temperature and general symptomatology are such poor indications of the activity of the thyroid gland, more reliance should be placed upon the basal metabolism test. Recent studies by Hurxthal on the relation of blood cholesterol to thyroid dysfunction may be the basis for a more accurate method of determining the activity of the thyroid gland, and may prove to be a more simple and economical laboratory procedure than the basal metabolism test.

I wish to present the following case as a characteristic example of what frequently occurs in this type of condition. On August 22, 1933, Mrs. C. visited my office to inquire about delivery charges. At this time she was approximately eight months pregnant. This was her first pregnancy and she had been under the care of her family physician who had told her everything was as it should be. On September 2, she called me saying that she had not felt motion for three days and that she was losing some water. She was sent to the hospital where she was normally delivered of a stillborn baby which weighed five pounds and eight ounces. Grossly, the fetus, placenta and umbilical cord presented no abnormalities. Her puerperium was normal.

On October 17, 1933, she came to my office for

an examination to see if we could determine any cause for her misfortune. She was very anxious to become pregnant again and to have a live, healthy baby.

*Family history:* Her mother and father are alive and well. She has two sisters who are receiving treatment for hypothyroidism, and one brother alive and well.

*Husband history:* The husband is a dentist. A recent physical examination by an internist was essentially negative. Wassermann and Kahn tests were negative. No history of metal or drug poisoning.

*Past history:* The patient had had scarlet fever, measles, and pertussis during childhood. A tonsillectomy had been performed, but her general health has always been good.

*Menstrual history:* She began menstruating at fourteen years of age. Her periods were regular, occurring every twenty-eight to thirty days and lasting for three days.

*Present history:* The patient was a housewife, twenty-six years of age. This was her first pregnancy. For the past two or three years she has noticed the following symptoms:

1. Dulness
2. Inability to think clearly at times
3. Chills easily, requiring considerably more clothing than husband
4. Skin rough and dry, and fingernails very brittle
5. Hair coarse and straight
6. Feels tired and weak at times
7. Has gained about thirty-four pounds of weight during the last four years. Her system's history was entirely negative.

The physical examination revealed a well developed, slightly obese white woman. The hips and shoulders were well padded with fat and there was some puffiness of the dorsal surfaces of the hands. The height was 5 feet and 1½ inches; weight, 130 pounds; temperature, 97 degrees, pulse 88, blood pressure 118/65. Eyes, ears, nose and throat were negative. Teeth were in good condition. The thyroid gland was not palpable. Breasts were of moderate size and presented no defects. Heart and lungs were negative. Abdomen and extremities were negative. Wassermann and Kahn tests were negative. The white blood count was 8,000; the red blood count, 4,200,000, and hemoglobin, 85 per cent. The basal metabolic rate was minus 14 per cent.

A diagnosis of hypothyroidism was made, and the patient was placed on thyroid extract, grains one-half, three times daily. The patient was watched closely and the basal metabolic rate was



checked on December 13 at which time it was found to be plus 4 per cent. Her weight was 126 pounds and her pulse rate 110. She complained of some palpitation at this time. The dose of thyroid extract was decreased to one-half grain daily. On this small dosage she would develop an increase in the pulse rate and palpitation of the heart which at times forced us to discontinue the medication for several days. On May 2, 1934, the basal metabolic rate was plus one per cent, weight 126 pounds, blood pressure 118/60. She was feeling well.

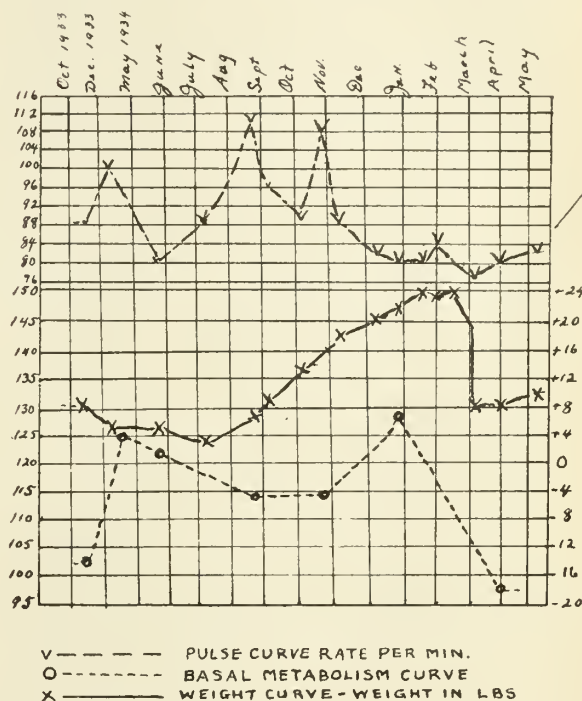
In July she consulted me thinking she was pregnant. Her last menstrual period had begun on May 7. On examination her weight was found to be 124 pounds, blood pressure 112/60, and pulse rate 88. Pelvic examination revealed a uterus the size of an eight weeks' pregnancy. Thyroid extract was continued in one-half grain doses daily. This small dose of thyroid extract again produced an increase in the pulse rate and palpitation, forcing us at intervals to discontinue the medication for a short time. This proved to be the case up to the last month of pregnancy. On August 23, her metabolic rate was minus six per cent, weight 127 pounds, blood pressure 106/60, pulse rate 110. On October 27, the basal metabolic rate was minus five per cent, weight 140 pounds, blood pressure 120/78, and pulse 108. On December 26 her basal metabolic rate was plus seven per cent, weight 146 pounds, blood pressure 110/60, and pulse rate 80. The urinalysis was negative throughout her pregnancy. During the last month, she was able to take her thyroid extract without any distressing symptoms developing. On February 18, she was normally delivered of a six pound, fourteen ounce baby. The baby was normal as far as could be determined by physical examination and has been developing normally since.

Following the birth of the baby, we discontinued the thyroid extract. The mother was able to nurse the baby for two weeks. The milk supply diminished to a point where it was useless to attempt nursing. Her puerperium was afebrile. Her basal metabolic rate on April 1 was minus 18 per cent, her weight was 130 pounds, pulse rate 80, and blood pressure 108/78. In spite of the low metabolic rate she was feeling well.

The accompanying graph shows the pulse rate, the weight, and the basal metabolic readings before, during and after pregnancy. The basal metabolic readings were taken on the same machine by the same technician and under the same conditions. The pulse rate was taken on the days the patient was weighed.

In summarizing this case there are several

rather interesting points. The metabolic rate was below normal during the early months of pregnancy, yet at this time we were able to give only small doses of thyroid extract. Even then a rapid



pulse and palpitation resulted, necessitating the discontinuance of the medication for several days at a time. The mother was able to nurse the baby for a short time only. The basal metabolic rate returned to a low level as soon as the thyroid extract was discontinued.

# CONCLUSIONS

Patients with hypothyroidism require careful supervision and attention during their pregnancy. The activity of the thyroid gland cannot be determined with any degree of accuracy by watching the pulse rate, weight gain, blood pressure readings, or general symptomatology. The basal metabolic rate determination is at present our best available method of judging the activity of the thyroid gland.

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### CLINICAL NOTES FROM THE COLLEGE OF MEDICINE

#### RUSSELL'S TRACTION FOR FEMORAL FRACTURES

FRED E. HAMBRECHT, M.D.

Iowa City

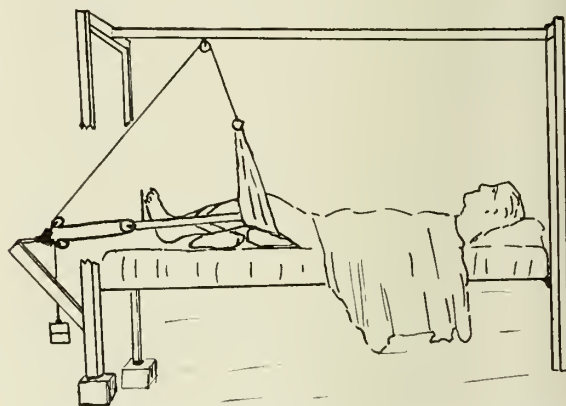
From the Department of Surgery

A method of traction for treatment of fractures of the femur was described by R. Hamilton Russell of Melbourne, Australia, in 1924. The principle embodies the utilization of two component forces, the resultant of which exerts a pull in the long axis of the femur. The method has been in use at the University Hospitals in the treatment of most of the fractures of the shaft of the femur for about three years. Although surgical neck fractures can be treated by Russell's method, Whitman's treatment is preferred for this type of fracture where feasible. The simplicity, ease of application, efficiency and immediate comfort given the patient makes the method a valuable addition to fracture therapy and prompts its reiteration.

The technic of application is shown in Figure 1. A pillow is placed under the fractured thigh in order to provide support and maintain the normal curve of the shaft. A second pillow is placed beneath the lower leg so as to maintain the knee in ten to fifteen degrees flexion. This pillow *should lift the heel just above the plane of the bed and must not raise it higher*. A turkish towel is then slung under the knee and tied to an ordinary clothes line which is carried to an overhead pulley so placed that a vertical line dropped from it would strike the leg well below the knee. The position of this pulley is extremely important and in itself can militate to success or failure of the rigging. The rope, after passing through the overhead pulley, is carried to the foot of the bed and there passes through a series of three pulleys. Two, one just above the other, are fixed to the bed and the third is attached to a foot piece which in turn is connected with Buck's extension ad-

hesive strips on the leg. The Buck's extension strips should not extend above the knee. An eight pound weight, sufficient for an adult of average build, is attached to the end of the rope. Counter-traction is secured by elevating the foot of the bed twelve to fifteen inches.

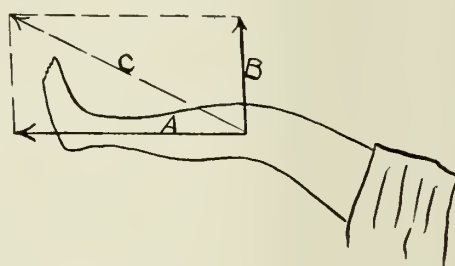
The arrangement of pulleys at the foot is such that the effective pull in the axis of the lower leg



Redrawn from *Brit. Surg. Jour.*, 1924

Fig. 1. Russell's Traction. Note the position of the overhead pulley, also, that the heel just floats from the plane of the bed.

is twice that of the weight used. Thus, disregarding friction, an eight pound weight gives an effective pull on the lower leg of sixteen pounds. At the same time a force of eight pounds continues to act on the turkish towel sling under the knee. A parallelogram of forces is set up, the two components of which create a resultant force which acts in the axis of the femur. A diagram of this parallelogram is shown in Figure 2. The arrow



Redrawn from *Brit. Surg. Jour.*, 1924.

Fig. 2. Showing Russell's "parallelogram of forces." The two component forces, A and B, create the resultant force, C, which acts in the axis of the femur.

"A" represents the force of sixteen pounds in the direction of the axis of the lower leg, while arrow "B" represents the force of eight pounds acting in the direction of the rope extending from the turkish towel to the overhead pulley. The combination of these two forces produces a resultant force, "C", which acts in the direction of the axis of the femur.



The traction, as described, is maintained for four or five weeks. However, after the first three weeks the weight is reduced to five or six pounds. After traction is discontinued, the patient is placed in a double hip spica for seven to ten additional weeks.

Three points of great importance must be borne in mind constantly during the use of the method:

1. The overhead pulley must be so placed that a vertical line dropped from it will strike the leg well below the knee.

2. The heel must float off the plane of the bed so that it will neither touch it nor be several inches above it.

3. Inasmuch as the force pulling in the axis of the lower leg is twice that of the weight used, an undesirable overpull may result if too large a weight is used. This is especially true when this method is used for children.

## MELANOMAS AND MELANOSARCOMAS

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From the Department of Surgery

Pigmented nevi are of particular interest because of their relation to melanosarcomas. By far the majority of the pigment forming tumors are found on the skin, especially of the neck, face and back. Less frequent sites of origin are the choroid coat of the eye, the meninges and the colon. They have been observed, though rarely, in the parotid gland and the small intestine. Moles often occur near sebaceous glands, blood and lymph vessels, and nerves, and their frequent association with multiple neurofibromatosis tends to substantiate Masson's hypothesis that pigment making cells in the epidermis are closely connected with sensory nerve terminals. Histologically, pigmented nevi may simulate sarcomas or carcinomas.

Twenty-five patients presenting pigmented nevi which were proved histologically to have undergone a malignant change to melanosarcomas were admitted to the University Hospitals during the years 1920 to 1934. The distribution of the primary nevus with relation to its position on the body surface was as follows: six were on the trunk, four on the face, three on the scalp, three on the plantar aspect of the foot, three in the nail bed, two on the leg, two on the neck, one on the eyelid, and one on the lip. The three nail bed lesions represent the melanotic whitlow described by Hutchinson.

Typically benign moles grow slowly, if at all, over a long period of time and then tend to fibrose and atrophy. It is widely recognized that trauma is the most important factor in the production of

malignant change. Moles in exposed locations, therefore, are most likely to become malignant. All too frequently trauma is due to an inadequate removal. The primary mole had been "excised" from five patients in the present series and "removed" by chemical or electric cautery in four others. Moles on the feet, face and scalp where trauma is produced by the rubbing of shoes, by shaving and by combing, are particularly subject to malignant change. Other dangerous sites are those places where clothing rubs, especially the "beltline" of the trunk.

The incidence of malignant change in benign pigmented moles was about equal in the two sexes. The age incidence varied between twenty and seventy-eight years, with the greatest number (nine) occurring in the fourth decade of life. The latent period between occurrence of trauma and onset of signs suggesting malignancy varied between three months and thirteen years. Including those patients on whom an attempt at removal of the mole was made, there was a large percentage with a latent period of two years. In all those patients who had a latent period of two years or more, regional metastases were present at admission.

The first manifestations of malignancy in pigmented moles, previously quiescent, were a sudden increase in size and darkening of color, together with superficial ulceration, scaling and intermittent serous or bloody discharge. Some moles became inflamed and sore. The most significant single sign in this series was the broadening and elevation of a previously flat mole. Eleven patients stated that the mole increased in size, seven that ulceration occurred, three noted darkening in color and three stated that a serous or bloody discharge was present. If there was no antecedent history of mole the growth began by producing a bulky, protruding tumor mass with either early or late superficial ulceration.

Diagnosis is relatively easy if there is a dark brown tinge to the mass or ulcer, or if portions are definitely pigmented. The primary lesion was usually two to three centimeters in diameter at the time of admission. The color of the tumor was described by thirteen patients as brown to black and by four as purplish. This suggests a possible source of confusion in the differentiation of melanomas and hemangiomas, so that the distinction often must rest upon the histologic appearance. The periphery of the malignant lesion is often irregular and tiny specks of pigmented cell growth may be seen beyond the main tumor mass, giving a fringed appearance. As a rule pedunculated moles are less likely to become malignant than flat ones. However, when flat moles assume malig-

nant characteristics they frequently become pedunculated. In four patients only a portion of the lesion, usually at the periphery, became elevated and showed the most active growth histologically. It is frequently difficult to identify the primary tumor, and metastases may occur from lesions of any size, from a "mere spot" to a diameter of several centimeters. This is exemplified by a patient admitted because of enlarged cervical lymph nodes which were diagnosed in histologic section as melanosarcoma. A search of the same side of the body revealed a tiny lesion which the patient described as a "freckle". On section, it seemed to be the primary offender. Loss of weight and strength appear late in the disease and only after extensive invasion has occurred. No patient, having only regional metastases, complained of loss of strength. The pigment or its components may be eliminated through the urine, producing melanuria. This may be evident in fresh urine or appear after some hours.

Metastases usually occur early in melanosarcomas and may arise by either lymph or blood channels. When they arise through the former route they usually appear late. Hence, it is not uncommon for many months or even years to elapse before the slightest evidence of regional or distant involvement becomes apparent. There is little evidence concerning the factors which determine the mode of invasion, although occasionally an accumulation of tumor cells is seen around blood vessels and dilated blood sinuses, suggesting an invasion of vessels. Metastases often show considerable variation in gross and microscopic appearance from the primary lesion. Thus, they may show no pigment even though the primary lesion is deeply pigmented, or vice versa. Highly malignant, deeply pigmented metastases may form cysts filled with black fluid simulating India ink. Numerous tiny pigmented spots on the skin, representing areas of metastatic tumor deposit, are frequently seen in generalized blood stream dissemination. One patient was reported as having over five hundred such metastatic lesions at the time of death. Fourteen patients came to the hospital because of growth in regional lymph nodes. One patient complained of a generalized lymphadenopathy and the diagnosis was made following biopsy of an axillary node. Four patients with a primary lesion on the skin were admitted complaining of symptoms indicating cerebral tumors which were proved, at the post-mortem examinations, to be melanosarcomas. In none of these instances had the initial skin lesion aroused suspicion. Frequent reports have been

made regarding metastases of melanosarcomas to the brain.

The prognosis is poor and the majority of patients die within twelve months after the appearance of metastases. Repeated removal of recurrent metastatic nodules seems to offer a chance for prolonging life. One patient lived five years after the primary lesion and regional nodes were removed, during which time recurrent local nodules were excised four times. Another patient had excision of the primary lesion performed fourteen years ago, excision of regional lymph nodes six and eighteen months later, and is alive without recurrence at the present time. Melanosarcomas are resistant to x-ray and radium, and these have seldom been used during recent years at the University Hospitals in the treatment of such tumors.

#### CONCLUSIONS

1. Benign melanomas should be removed, when indicated, by adequate excision.
2. The use of caustics or similar agents for removal of either benign or malignant melanomas is condemned.
3. When definite malignant changes have occurred, a wide excision including involved regional lymph nodes, is indicated.

#### THE FINLEY HOSPITAL CLINICOPATHOLOGIC CONFERENCE

##### CARCINOMA OF THE PANCREAS; CARCINOMATOUS THROMBUS OF THE PORTAL VEIN; ASCITES

B. A. MICHEL, M.D., A. C. PFOHL, M.D.,  
TOM YOUNAN, B.A.,  
Dubuque

Ascites due to carcinoma of the pancreas is not uncommon but usually occurs late in the disease. In most instances it has been produced by pressure on the portal vein by involved lymph nodes or generalized abdominal metastases. The following case is reported because ascites was the outstanding symptom from the start and because at necropsy this was found to be due to a carcinomatous thrombus which completely filled the portal vein.

#### CASE REPORT

*Chief complaint:* The patient, a white woman, seventy-two years of age, was admitted to The Finley Hospital, August 6, 1934, because of "swelling of the abdomen and weakness".



*Family history:* One brother died of heart trouble at fifty-two years of age; otherwise the family history was negative.

*Past history:* She had always been well.

*Present illness:* For the past year her abdomen had been enlarging. During the last few months she had become weaker and she tired easily. She had had no pain, but had had what she called a generalized uncomfortable feeling.

*Physical examination:* The temperature was normal, the pulse and the respiratory rates were 80 and 20 per minute. The blood pressure was 152/98. The head and nasopharynx were negative. The heart sounds were good and there were no murmurs. The heart was not enlarged. The lungs were clear. The abdomen was greatly distended and had all the signs of fluid. No masses or points of tenderness could be made out. Rectal and vaginal examinations were negative. There were scars over each ankle (old ulcers). The skin was not jaundiced. The patient's weight was 168 pounds. The urine showed the very faintest possible trace of albumin, acid reaction, and a rare hyaline cast and leukocyte in the sediment. The specific gravity was 1.036. The blood examination showed white blood count, 3,200; red blood count 3,200,000; hemoglobin, 65 per cent. An x-ray examination showed only evidence of ascites.

*Provisional clinical diagnosis:* Ascites due to malignancy.

*Course in hospital:* An exploratory operation was done and in addition to the ascites the essential finding was a hard irregular mass the size of a fist which was behind the stomach and over the aorta and which merged with the pancreas. The tail of the pancreas was stony hard. The spleen was enlarged and felt nodular. Nothing was removed.

*Postoperative diagnosis:* Carcinoma of the tail of the pancreas with ascites.

*Subsequent course:* The patient remained in the hospital nineteen days. After returning home the ascites recurred and required frequent abdominal paracentesis. A total of 160 quarts of fluid was removed. During the last two weeks pain, which had been lacking, became a prominent symptom and required morphine for its relief. She failed gradually and progressively and died June 13, 1935, approximately two years after the onset of symptoms.

*Final clinical diagnosis:* Carcinoma of the tail of the pancreas with ascites; emaciation.

*Necropsy report (abstract):* At the necropsy 1500 c. c. of fluid were found in the peritoneal cavity. The body and tail of the pancreas were stony

hard and twice the normal size. On section the head of the gland appeared normal. The body and tail were composed of gritty, hard, silvery gray tissue divided into lobules by fibrous septa. The lymph nodes along the upper border of the pancreas were enlarged and on section were definitely neoplastic. Extending upward from behind the head of the pancreas to the liver was a hard mass which on dissection was found to be the portal vein. It was filled by a neoplastic thrombus of the same appearance as the pancreatic neoplasm. The liver was not enlarged but on section all the branches of the portal system were found filled by the neoplastic thrombus (Fig. 1). In a

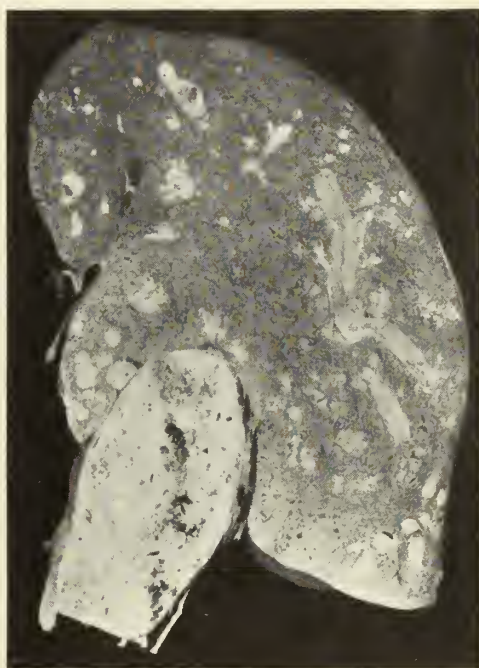


Fig. 1. Photograph of a section of the liver and portal vein. The carcinomatous thrombus fills the latter and its branches through the liver.

few areas the growth had extended to the adjacent liver substance. No other metastases were found. Sections from the pancreas, portal vein, and liver showed the same histologic picture, i. e., adenocarcinoma. The other essential findings were bilateral fibrous pleurisy, chronic perisplenitis, dilation of the left renal pelvis and arteriosclerosis.

#### *Anatomic diagnosis:*

Primary: Carcinoma of the body and cauda of the pancreas; metastases to the regional lymph nodes; invasion of the portal vein and its branches; ascites; operations: (exploratory laparotomy and multiple abdominal paracenteses); emaciation.

Subsidiary: Arteriosclerosis; chronic splenitis and perisplenitis; bilateral fibrous pleurisy; left pyelectasis.

#### DISCUSSION

*Incidence:* Carcinoma is the most common tumor of the pancreas and makes up from one to three per cent of all carcinomata. Of the upper abdominal neoplasms it is only second to cancer of the stomach in order of frequency. The following table given by Hoffman<sup>1</sup> indicates the gradual rise in its incidence since 1915:

CANCER OF THE PANCREAS  
United States Registration Area  
1915-1932

		Rate per 100,000	
1915	1.1	1921	1.5
1916	1.2	1922	1.5
1917	1.2	1923	1.7
1918	1.2	1924	1.8
1919	1.2	1925	1.8
1920	1.3	1926	2.0
		1927	2.2
		1928	2.3
		1929	2.4
		1930	2.5
		1931	2.6
		1932	2.8

There were 33,135 deaths due to the disease in the United States Registration Area between 1915 and 1932. In the last year there were 3,361 deaths. While many believe that the incidence of carcinoma of the pancreas like other forms of cancer is increasing, the apparent increase is probably due to better diagnoses. Thus Bolduan and Weiner<sup>2</sup> in their studies in New York City found that the death rates from "visible" cancers (skin, buccal cavity, breast, and female genitals) showed no increase, although there had been a steady rise in the general cancer mortality. They point out that "if cancer were actually becoming more prevalent it would be strange not to have the 'visible' cancers participate in the increase."

*Etiology:* Like that of cancer in general the etiology of carcinoma of the pancreas is obscure. Aging is a predisposing cause and three-fourths of the cases occur between thirty and sixty years. Most of the other twenty-five per cent are encountered after sixty although a small percentage are found from infancy to thirty. Men are affected twice as often as women, and trauma which is more likely in the former has been considered a possible etiologic agent. Over eating or drinking with consequent overweight or obesity are also considered as predisposing causes. Chronic pancreatitis, so frequently associated with chronic cholecystitis and so infrequently diagnosed clinically, is believed to be the most important predisposing factor as it is often found in parts of the gland involved by the neoplasm. Ewing<sup>3</sup> has suggested that accessory glandular tissues may be the origin of some of the tumors.

*Pathology:* Cancer of the pancreas involves the head of the gland in 80 per cent of the cases.

In the vast majority of these, obstruction of the common bile duct occurs and results in enlargement of the gallbladder and cholemia. Thus jaundice is often the first symptom which causes the patient to consult his physician. Occasionally the neoplasm is limited to the body or to the tail and very rarely the entire gland is involved. The tumors of the body or tail tend to be larger than those of the head, and Kiefer<sup>4</sup> mentions one which measured sixteen by nine by seven centimeters and weighed 640 grams. Three distinct histologic types of carcinoma of the pancreas are recognized. The first arises in the duct epithelium; the second in the acinar cells and the third in the insular cells. Metastases, usually by way of the lymph stream but at times through the blood stream, occur fairly early. The regional lymph nodes, common duct and liver are first involved. At times there may be a generalized carcinomatosis or the growth may spread throughout the peritoneal cavity. The neoplasm may invade neighboring organs by direct extension and thus the stomach, intestines, left kidney or adrenal, and the vena cava may be invaded. Obstruction of the portal vein is usually caused by external pressure of enlarged lymph nodes and results in ascites. Thus Hoffman states that Masumoto found ascites in twelve out of fourteen cases of pancreatic cancer. In our review of the recent literature we have found only one reference by Kaufman<sup>5</sup> to carcinomatous thrombosis of the portal vein as a cause of the ascites.

*Symptomatology:* The initial signs and symptoms of carcinoma of the pancreas are usually vague. This is especially true of the type originating in the body or tail of the gland. At first the patient may complain of only mild digestive discomfort, sensation of fullness after meals, eructations, nausea or loss of appetite. These are not distinctive symptoms but demand a very complete study of the gastro-intestinal tract in a patient over thirty-five years of age. If the carcinoma arises in the head of the gland, cachexia including loss of weight, jaundice, pain, nausea with or without vomiting, indigestion, constipation and weakness are the most important symptoms. Frequently jaundice often with itching of the skin is the symptom causing the patient to consult a physician. Pain is a variable symptom both in frequency and intensity. In about one-third of the cases it is absent or at least a terminal manifestation of the disease. In the initial stage it is usually mild and described by the patient as a feeling of fullness or pressure. Gradually it tends to become more intense and of a colicky character. It may resemble biliary colic or in some



instances may be described as an intermittent sharp, stabbing pain in the epigastrium. In other cases it may be a steady, dull, severe mid-epigastric pain radiating to the lower back. In another group the patients complain of paroxysms of severe pain beginning near the umbilicus and radiating to the back or front of the chest. In carcinoma of the body or tail of the pancreas pain may be the outstanding early symptom. Jaundice is due to obstruction of the common duct because of direct extension of the growth or because of the pressure of enlarged lymph nodes. In practically all cases it is persistent and progressive. The gastric or intestinal symptoms are probably largely due to interference with the flow of bile or pancreatic secretion into the intestine. Vomiting is usually due to pressure of the growth on the pyloric portion of the stomach. In the type of carcinoma which arises in the insular tissues the outstanding symptoms may result from hypoglycemia, i. e., weakness, muscular twitching, sweating, restlessness, mental confusion, mania or other nervous manifestations. In the beginning fever is absent, but with the involvement of other organs there may be a moderate rise in temperature. Edema of the legs occurs fairly frequently as the result of pressure of the neoplasm or enlarged lymph nodes on the vena cava. Ascites is also a prominent symptom because of interference with the portal circulation or as the result of abdominal metastases. It is evident that the symptoms of pancreatic cancer are varied and are likely to be indefinite. While the diagnosis may be easy in some cases, in the majority it can be reached only by intensive studies.

*Diagnosis:* As indicated above the diagnosis of carcinoma of the pancreas may be easy or exceedingly difficult. In those cases arising in the head of the gland with early invasion of the common bile duct, the progressive jaundice almost always associated with an enlarged gallbladder (Courvoisier's Law) and evident loss of weight gives a characteristic clinical picture. On the other hand when the neoplasm arises in the body or tail physical signs may be absent although in some cases a mass may be felt in the left hypochondrium or mid-epigastrium. In many cases with less definite symptoms and physical signs the diagnosis may be made by the roentgenologist if a characteristic deformity of the stomach or duodenum is found. All too often this is lacking. Laboratory tests are of relatively little aid except in the type of tumor arising in the insular cells when repeated blood sugar estimations may give the clue to the diagnosis. Frequently it will be necessary to per-

form an exploratory laparotomy before a diagnosis can be made.

*Treatment:* The treatment is surgical and is largely palliative. This is due to the fact that most cancers arise in the head of the gland, and this location is unfavorable for operative resection. On the other hand cancer arising in the head and tail may be resected if diagnosed before attaining considerable size and before metastasis has occurred. Unfortunately the diagnostic difficulties render such cases exceedingly rare. In most cases some type of operation to relieve the jaundice, i. e., cholecystostomy, cholecystenterostomy or cholecystogastrostomy should be done. Much of the treatment will necessarily be symptomatic.

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#### AMERICAN PUBLIC HEALTH ASSOCIATION TO MEET IN MILWAUKEE

The executive board of the American Public Health Association, the Milwaukee Local Committee, the city of Milwaukee, and its citizenry cordially invite you to attend the sixty-fourth annual meeting of the organization.

The annual public health meeting, the center of health activities, the place where first announcements are made of new discoveries, of research in progress, of new approaches to old problems, and of improved technics in established health practices, will open in Milwaukee, Wisconsin, on October seventh and continue to the tenth.

More than four hundred presentations of health topics covering the following association sections will be given: health officers, laboratory, vital statistics, public health engineering, industrial hygiene, food and nutrition, child hygiene, public health education, public health nursing, and epidemiology. More than ten other organizations are holding meetings and conferences in connection with this great public health gathering.

The exhibit of scientific work contributed by members of the American Public Health Association, health educational material, and commercial products possessing health significance will be held at the Milwaukee Auditorium, where sessions also will be held.

## STATE DEPARTMENT OF HEALTH

*Nathan L. Biering*

### Annual Exhibit at the State Fair

The exhibit of the State Department of Health at the Iowa State Fair held in Des Moines from August 21 to August 30, was held for the third year on the main floor of the educational building. Unusually good attendance characterized all of the exhibits and the State Fair as a whole.

Emphasis on the need for adequate measures to prevent smallpox was a prominent feature of the exhibit. Large charts illustrated the undue prevalence of this disease in Iowa as compared with some of the eastern states. Lantern slides presenting tables and graphs relative to smallpox were shown by means of an attractoscope. A moving picture film, presented in natural color the daily reaction following the multiple pressure method of vaccination, over a period of twenty-one days following vaccination.

The Division of Public Health Engineering presented as one of the federal projects for improvement in rural sanitation, a miniature model of a sanitary privy, giving details of the superstructure and of pit construction. Another model portrayed in miniature, a modern swimming pool, with bath house at one end and filtration plant at the opposite end of the pool.

Figures pertaining to deaths from accidents, cancer, heart disease and tuberculosis, distributed according to age groups, were shown by means of block models, painted in white. Similar block models presented data dealing with the various causes of maternal and infant mortality.

A brief story of undulant (Malta) fever in Iowa was told by means of six charts, five of which carried enlarged photographs of cows, hogs and farm buildings, in typical rural scenes. In connection with this feature of the exhibit opportunity was afforded, particularly to men engaged in farm work, to have a test made for evidence of exposure to Bang's disease or infectious abortion in farm animals. Whole blood specimens in three to four c.c. amounts were obtained from 151 persons, nearly all of whom were farmers or farm workers attending the State Fair from all sections of the state. Agglutination tests for undulant fever and tularemia are being performed at this time at the State Hygienic Laboratories in Iowa City.

Many visitors to the exhibit signed requests for health bulletins at the literature booth. A considerable number of physicians and veterinarians attended the exhibit.

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#### EXPECTED AND REPORTED MORBIDITY IN IOWA IN 1935

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In an article published in this section last year there was presented a table showing the cases of common communicable diseases which might be expected, assuming that the year 1934 was one of



Table I.  
*Expected and Observed Morbidity in Iowa, 1935.*  
*(Based on Tri-Central Median for Nine Years 1926-1934)*

	Diphtheria		Scarlet fever		Chicken-pox		Small-pox		Cerebro-spinal Meningitis		Measles		Polio-myelitis		Mumps		Typhoid		Whooping Cough	
	Ex.	Obs.	Ex.	Obs.	Ex.	Obs.	Ex.	Obs.	Ex.	Obs.	Ex.	Obs.	Ex.	Obs.	Ex.	Obs.	Ex.	Obs.	Ex.	Obs.
Jan...	67	46	352	296	248	301	162	6	12	4	247	4580	1	0	136	602	6	8	78	55
Feb...	46	33	351	372	237	196	185	12	7	10	238	5640	1	3	185	776	4	6	78	47
Mar...	43	40	357	367	182	233	164	9	9	8	408	5509	1	1	225	689	4	15	94	60
April...	33	45	250	370	194	254	182	22	6	16	447	3393	0	0	153	1381	4	3	71	78
May...	32	40	209	355	171	347	149	21	3	12	429	1688	0	3	179	1050	3	6	73	60
June...	26	30	129	232	98	176	98	30	2	7	254	479	0	0	87	462	7	3	74	82
July...	19		69		35		70		2		57		2		31		10		82	
Aug...	22		46		10		20		3		10		8		14		27		64	
Sept...	33		88		15		13		2		10		16		12		23		41	
Oct...	73		180		121		23		3		12		16		25		19		36	
Nov...	74		234		345		104		3		12		6		60		12		56	
Dec...	66		297		348		145		4		27		2		94		8		66	
Total....	534		2562		2004		1315		56		2151		53		1201		127		813	

average prevalence. A similar table for the year 1935 is presented below, based upon the tri-central median for the nine preceding years, 1926 to 1934.

If we compare the total expected and reported cases for the six months ending June 30, it will be observed that only three diseases were of less than average prevalence, namely diphtheria, smallpox, and whooping cough. The other diseases showed increases ranging between 20.7 and 952.3 per cent, the greatest increases occurring in the cases of measles and mumps. The list as a whole shows an increase of 308.0 per cent. Thus far, therefore, the year 1935 has been a year of much more than ordinary prevalence with respect to the majority of the diseases listed in Table II.

Table II.  
*Expected and Reported Morbidity in Iowa, January to June, 1935.*

Disease	Expected cases	Reported cases	Percentage change, taking Expected cases as 100%	
			Increase	Decrease
Diphtheria.....	247	234	.....	5.3
Scarlet fever.....	1648	1992	20.7	
Chickenpox.....	1130	1507	33.3	
Smallpox.....	940	100	.....	89.4
Cerebrospinal Meningitis.....	39	57	46.2	
Measles.....	2023	21,289	952.3	
Poliomyelitis.....	3	7	133.3	
Mumps.....	965	4,960	413.9	
Typhoid fever.....	28	41	46.4	
Whooping cough....	468	382	.....	18.4
Total.....	7,491	30,569	308.0	.....

PREVALENCE OF DISEASE

	July '35	June '35	July '34	Most Cases Reported From
Diphtheria .....	25	30	14	Calhoun, Black Hawk
Scarlet Fever .....	94	232	73	Dubuque
Typhoid Fever .....	7	3	8	Black Hawk
Smallpox .....	26	30	8	Woodbury
Measles .....	68	479	168	Woodbury
Whooping Cough .....	89	82	98	Woodbury
Cerebrospinal Meningitis .....	10	7	1	(For State)
Chickenpox .....	56	176	38	Boone, Black Hawk
Mumps .....	110	462	31	(For State)
Poliomyelitis .....	1	0	2	Carroll
Tuberculosis .....	26	52	49	(For State)
Rocky Mountain Spotted Fever.....	3	1	2	Lee, Poweshiek, Union
Undulant Fever .....	13	9	6	(For State)
Syphilis .....	110	153	111	(For State)
Gonorrhea .....	175	146	195	(For State)

# The JOURNAL of the Iowa State Medical Society

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## ON THE SHOULDERS OF OUR ANCESTORS

In introducing his eminently readable volume on Medicine in the Middle Ages, author Riesman states "In our pride over the achievement of our own age we are apt to undervalue or despise the past, not realizing that we can see far because we are standing on the shoulders of our ancestors." Although clothed in attractive and new garb, the thought expressed is not new. The progressive man in any endeavor must fully appreciate and profit by the experiences of the past. Unfortunate, and perhaps at the same time fortunate, is our inability to inherit experience and wisdom from our ancestors, much as we inherit property. How intellectually wasteful it appears when a mature and experienced mind is lost with the dissolution of the body; and again how often is progress slowed and development hindered because of the painful trial and error method by which we build up our own experience and wisdom. Only the work of a lifetime diligently devoted to the accumulation of wisdom can produce a Sydenham, a Hunter or an Osler. How sad it is and how wasteful it appears that such mental achievement must end. The records of the past, however, clearly teach that the wisdom of these and scores of others, whose brilliant contributions to medicine stand out so conspicuously in the evolutionary panorama of advance, is not lost but lives on for those who will take the trouble to stand on the shoulders of their ancestors and so view the broad fields of medical development. To those, then, who will to know, progress is perpetual and no gain is ever lost. As the physical horizon is extended, as we ascend a high mountain, so our mental horizon is widened when viewed from the tall shoulders of those whose achievements have marked the records of the past.

The man, who, through unstudious habits or

slough, is denied this vantage point, rarely attains more than mediocre learning and, if endowed with natural ability, merits pity. Individual experiences bring learning, but rarely wisdom. The illustrious Ben Johnson once said, "Very few men are wise by their own counsel or learned by their own teachings, for he that was only taught by himself had a fool for his master."

## THERAPY IN PERIPHERAL VASCULAR DISEASE

Several clinical forms of peripheral vascular disease have long been recognized, and the significant diagnostic differences of these forms have been widely studied. Particularly difficult from the standpoint of treatment were those forms characterized by "rest" pains, ulceration and gangrene. Vasodilation with drugs, diathermy, contrast baths and passive hyperemia from blocking venous return channels, were usually unfruitful or very temporary in character. Amputation of the offending limb was usually the only escape. Nerve block and sympathetic ganglionectomy, so brilliantly successful in functional cases, offered little permanent value, except for the relief of pain in the majority of these cases. It is not surprising, then, that those particularly interested in vascular diseases should welcome any method which would offer hope to this difficult group of patients, particularly if the method offered gave promise of permanent results.

As early as 1893 August Bier suggested suction for the production of local hyperemia. Twelve years later Klapp<sup>1</sup> produced an apparatus employing this principle for the treatment of an entire limb. He suggested the use of this apparatus in the treatment of fractures and slowly resolving surgical conditions. It was not until 1931, however, that the method was employed in the treatment of peripheral vascular disease when Braeucker successfully employed the treatment in Raynaud's disease.<sup>2</sup> Beginning in August of 1932, and reported in June of 1933, Reid and Herrmann<sup>3</sup> employed this method with success in the treatment of a group of patients with chronic obliterative vascular disease of the extremities. Their cases include advanced thromboangiitis obliterans, syphilitic arteritis, secondary obliterative arteritis from arteriosclerosis. Following this report they published a minute description of the apparatus employed, and through a commercial concern arranged for its manufacture. The "encouraging results" of these investigators prompted others to employ their method of treatment, but because of the long course of treatments required, and the chronicity of the diseases



treated, the literature as yet contains little comment upon the methods in other hands.

Late in 1934 deTakáts<sup>4</sup> published a critical review of his experience with these methods, and discussed the published report of Reid and Herrmann as well as those from other sources, chiefly Landis and Gibbon from the metabolic division of the Philadelphia General Hospital. He concludes that "It is correct to assume that a temporary increase in blood flow can be obtained in the presence of an organic obstruction and in the presence of a peripheral vascular bed, which can hardly dilate, even if deprived of its vasoconstrictor tone." He further believes that, "A subjective and objective improvement may be obtained," and finally that, "If used by men familiar with peripheral vascular disease, no harm can come from its use." Against the success of the treatment he points out its ineffectiveness in patients without myocardial reserve, in those patients where the large vessels keep sending more and more intimal plaques to obstruct the peripheral vessels, and in patients where the minute vessels are gradually closing up or where their general reaction to injury and repair is at a low ebb. He further points out that the method is not perfected to the stage at which the treatments can be continued for hours or days as would be required in many cases. He concludes, as may be anticipated, that the "most favorable seem to be the cases presenting involvement of the smaller vessels and relatively less cardiovascular damage."

More recently and particularly significant in evaluating this method of treatment are the reports of Landis and Hitzrot,<sup>5</sup> in which they report their observation of twenty-nine patients suffering from "advanced peripheral vascular disease with pain and ulceration." Good or fair results were reported in all except six cases; one case with osteomyelitis, four cases with gangrenous slough, and one case where treatment was discontinued prematurely. They conclude, "Suction and pressure therapy, if carefully applied, appears to be worthy of clinical trial in the treatment of peripheral vascular disease even when organic obstruction has advanced to the point where arterial blood flow can no longer be increased by vasodilation." While conclusive proof is still lacking for the unquestioned acceptance of this method of therapy, sufficiently favorable reports have been made by competent authorities to warrant a prediction of distinct merit in this new procedure, and to invite further studies along these lines of mechanical treatment. Proof is still lacking that the results obtained are of more than a temporary character or that they do more than tide the patient through a trying period when a collateral circulation is

being naturally established. Without doubt the procedure has definite limitations and contraindications, which must be defined by extended experience. Apparently little danger exists in the use of the treatment provided the patients are carefully selected and strictly observed during the course of the treatment by a competent and experienced observer. In the present state of its development the treatment must be considered experimental, and should be employed only by those definitely versed in peripheral vascular lesions, since hidden dangers may be revealed in the further use of this therapy.

A discussion of this subject would hardly be complete without mention of a very highly colored, sensational discussion of Dr. Herrmann and this method of therapy which appeared in a popular lay journal in the latter part of 1934.<sup>6</sup> Its author was Paul deKruif, who achieved considerable distinction as a popular writer following the publication of his book, "The Microbe Hunter." This sensational article reflected the unbounded enthusiasm of deKruif in the results obtained by Dr. Herrmann, but unfortunately the author allowed this enthusiasm to carry his discussion beyond the limits of demonstrated science. His claims for the treatment were so glowing in fact, that the intelligent, thinking reader would without doubt discredit the whole procedure and its proponent, together with the author of the article. This publicity we consider unfortunate, since the method is patently one of considerable merit, far too deserving to warrant such unscientific, journalistic ballyhoo. DeKruif leaves the reader with the feeling that this "godsend to humanity" is not available to the "pain-racked myriads" because of the implied intention of the medical profession to withhold this treatment for mercenary reasons. From the discussion earlier in this article it is immediately apparent that the treatment has not been sufficiently proved to justify its unrestricted use. Until this experimental stage is passed it would be unfortunate indeed "to spread the news of this simple and beautiful science to the countless hundreds of thousands in our country who could right now be relieved of their misery." An outstanding Iowa physician states, "The article by deKruif from the standpoint of the public is very unfortunate. Like all articles of this kind it is likely to give the wrong impression. The basis for the treatment advised by Dr. Herrmann is sound and I feel that he is very modest in his claims for it."

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### MAKING SCIENTIFIC NEWS ATTRACTIVE

The general public today has sufficient insight into popular science to cause them to welcome scientific articles in the lay press. In most states, the state and county medical societies, through appropriate committees, furnish carefully prepared scientific articles for the lay readers. To make these scientific articles more attractive, the Medical Society of the State of New York advocates terseness, a paragraphic style and a direct appeal to human interests by including scientific facts and curiosities from other fields of science than medicine. We present below, under their own caption, excerpts from several of their recent releases, partly because of their uniquely instructive character and, more especially, as illustrative of the plan.

#### DO YOU KNOW?

Baby grizzly bears weigh less than a pound at birth.

Bureau of Home Economics, Washington, D. C., states that at least one-fifth of the food budget should be spent for milk and milk products.

Nerves grow with apparent intelligence and purpose. Dr. Carl Caskey Speidel of the University of Virginia studied growing nerves in a tadpole and watched them sprout from the spinal column and go directly to the organ they were destined to connect with the central nervous system.

Freight cars have been painted white by one of the large meat packing houses. Experts say that they reflect enough more light so that the cars are cooler, and the ice saved pays for the paint.

School days are coming soon. Picture more than two million children setting forth for the first time on this new adventure away from home. Children should be made ready for school in more ways than clothes and books. They should hear well to know what the teacher says, and see well to see what she writes on the blackboard. Children who cannot breathe properly because of enlarged tonsils or adenoids do not get enough oxygen, are easily fatigued, and fall behind in school work.

Roman emperors built 50,000 miles of improved highway, some of it still in use.

Sugar contains no vitamins.

School can be made an effective health agency, if parents will accept and profit by the suggestions of the school physician, and make the school nurse a welcome visitor in the home. Parents, who think they know best, are relying on a little knowledge which we have been told is a dangerous thing; but a little knowledge is never a dangerous thing, if we know that it is only a little, and are eager for more from persons whose life-work is to acquire and distribute it.

Woman's work in the home averages to take fifty-one hours per week, according to a survey made of 2,000 families of what is called the "middle income group."

Speaking of animal experimentation, sometimes called vivisection, the late Dr. Charles W. Eliot of Harvard said: "The humanity which would prevent human suffering is deeper and truer humanity than the humanity which would save pain and death to animals."

Teething is an important period in the life of a baby. Mothers expect complications at this time. If the baby is restless, refuses to eat, has an elevated temperature and shows signs of swollen gums, he may be teething, or he may be getting into some other kind of trouble. Serious disturbances start in the same way and are easily confused with the teething process. A mother should be careful not to rely too much on her own diagnosis; after all she has had experience with only a few babies at most—the doctor has observed many.

During one hundred twenty years of immigration to the United States, most of the new citizens have come from Germany; next in order are Italy and Ireland.

Brazil nuts are eaten in many countries, but not in Brazil. "No like."

Edison received more than one thousand patents during his lifetime, and several were issued to his estate after he was dead.

Infantile paralysis begins much like an acute cold, with fever, headache, vomiting, congestion and night sweating, to be followed in many cases by weakness of muscles. The child should be put to bed immediately. Extensive experiments are going on with serum for this disease, and scientists are not yet sufficiently sure of results to justify widespread use. From six to eight weeks after the acute condition has passed, some power will return to the muscles; it is then that muscle training and massage is begun.

Babies like red best; adults prefer blue, reports Dr. Ruth Staples of the University of Nebraska.

"Nothing influences our conduct less than do intellectual ideas."—C. G. Jung in "Modern Man in Search of a Soul."



Weather affects the length of time children sleep. Naps are longer on rainy days. Boys are likely to sleep longer than girls. The first day of a severe change in the weather, the length of sleep drops markedly.

More rain, more rabbits. So says Dr. Charles T. Voorhies of the University of Arizona, who found that long-eared jackrabbits on the plateaus of the southwest have litters which contain more young in rainy weather than those born during the dry season.

Corn is affected with diabetes—plants form sugar that they cannot use—to an extent to damage them seriously. Prof. William H. Eyester of Bucknell University, New Orleans, finds that the disease is hereditary. Sugar accumulates in the leaves until they burst, killing the plant; but if kept in the dark, the condition is not developed.

Mirrors made of polished slate have been unearthed at Cook Inlet, Alaska, by Frederica de Laguna, a young woman archeologist of the University of Pennsylvania.

Your skin acts as a refrigerator. Every human being is supplied with two million sweat glands, through which moisture evaporates at an average of a quart a day. This lowers the temperature of the skin. Here we have the greatest cooling system in the world, constantly self-regulated, and ready for use. Nature has installed in the human body this modern invention, which worked for millions of years unknown to its beneficiaries, before man came to understand how the process takes place.

Airplane passenger trips average 327 miles in length.

Employees of the Pennsylvania Railroad would own the road and several other systems today, if, from the inception of the company, they had saved five per cent of their wages and invested them at prevailing savings bank rates, according to a speaker at a recent meeting of the American Statistical Association at New York City.

Hunchbacks have almost disappeared—and that, in a sense, is a real miracle of science. This type of curvature of the spine is bone tuberculosis caused by the bovine type of the disease. When Dr. Theobald Smith discovered the bovine type of germ, a great step in advance was taken toward showing society why it was worthwhile to purify the milk supply.

"Cool as a cucumber" is a correct expression—this vegetable usually remains at a temperature one degree lower than the surrounding air.

Value of the indestructible part of the human body—the bone ash—is less than \$1.00 at prevailing market prices.

Injured workmen, who formerly were required by the compensation law of New York state to accept the services of a doctor designated by the employer or the insurance company, may now choose their own physician from a roster approved for this type of practice by county medical societies. This new law went into effect July 1st in New York state, and its operation is being watched with interest throughout the country.

Babies need less food in summer, the same as grown-ups; the most vital factor is cleanliness in all the implements used in connection with its food.

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#### THE BOARD OF EXAMINERS IN THE BASIC SCIENCES

The Iowa Basic Science Law enacted by the Forty-sixth General Assembly became operative on July 4, 1935, and the Board of Examiners in the Basic Sciences appointed by Governor Herring held its first meeting in Des Moines on July 9, 1935.

The personnel of the Board was chosen from six of Iowa's leading educational institutions and comprises the following members: Joseph H. Bodine, Ph.D., University of Iowa; Edward Benbrook, D.V.S., Iowa State College; Benjamin H. Peterson, Ph.D., Coe College; William L. Strunk, Ph.D., Luther College; Charles Carter, Ph.D., Parsons College; and Robert E. O'Brian, Ph.D., Morningside College.

At the first meeting the organization of the Board was completed and Professor William L. Strunk was elected chairman and Professor Edward Benbrook secretary for the ensuing year. The membership of this first board was wisely selected since each member is recognized as an authority in the physical or biologic science which he represents. This should constitute a fitting qualification for conducting examinations in those sciences having a fundamental relation to the several healing arts. The new law requires that no member of the board shall hold a degree in any of the healing arts.

The act does not apply to Christian Scientists and those holding licenses in any of the healing arts or related professions as nurses, dentistry, etc., in Iowa. It also does not apply to students regularly registered, enrolled and in attendance as of July 1, 1936, in accredited schools of medicine, osteopathy or chiropractic in the state of Iowa. With these exceptions, the law will affect all persons who shall hereafter apply for a license to practice medicine or surgery, osteopathy and surgery, chiropractic, or any other system or method of healing hereafter to be legalized in Iowa, who will be required to present a certificate

of having successfully passed an examination in the six named basic sciences of anatomy, physiology, chemistry, pathology, bacteriology and hygiene.

The first examination has been set for October 8, 9 and 10, 1935. While this examination in the basic sciences will test the candidate's educational qualifications necessary for admission to the licensure examinations in the several healing arts, it will not necessarily limit the licensing examining boards from determining by further examination the candidate's knowledge as to the clinical or practical application of the different basic or fundamental sciences.

Iowa is the ninth state to enact a basic science law, it having been previously adopted in Connecticut, Wisconsin, Minnesota, Washington, Oregon, Nebraska, Arkansas, Arizona and the District of Columbia. In several states the introduction of basic science examinations has seriously interfered with reciprocity or interstate endorsement agreements. In the Iowa law the endorsement or acceptance of an equivalent examination is most comprehensive in that "the board may, in its discretion, waive the examination and issue a certificate of proficiency in the basic sciences provided for herein and may accept in lieu of examination proof that the applicant has passed before a board of examiners in the basic sciences or by whatsoever name it may be known or before any examining or licensing board in the healing art of any state, territory or other jurisdiction under the United States or of any foreign country, an examination in the six named subjects as comprehensive and as exhaustive as that required under authority of this act."

Since multiple examining boards exist in Iowa, the basic science act will promote a uniformity of preliminary requirements for the practice of the several healing arts which is distinctly desirable. The entire text of the law follows:

An act to establish a board of examiners in the basic sciences, to provide for its organization, powers, duties and compensation, to provide for examination in the basic sciences, authorizing such board to issue a certificate of proficiency in the basic sciences, which certificate shall be a pre-requisite to eligibility for examination for license to practice medicine and surgery, osteopathy, osteopathy and surgery and chiropractic or any other system or method of healing that may hereafter be legalized in the state of Iowa, to define the basic sciences, the healing arts, a license and to provide penalties for the violation of this act, to provide that the provisions of this act shall be severable.

Be it enacted by the General Assembly of the State of Iowa:

Section 1. This act shall be known as the "Iowa basic science law."

Sec. 2. Definitions for the purpose of this act:

(a) The basic sciences shall mean the following subjects: 1—Anatomy; 2—Physiology; 3—Chemistry; 4—Pathology; 5—Bacteriology; 6—Hygiene.

(b) The practice of the healing art shall mean holding one's self out as being able to diagnose, treat, operate or prescribe for any human disease, pain, injury, deformity or physical or mental condition and who shall either offer or undertake, by any means or method, to diagnose, treat, operate or prescribe for any human disease, pain, injury, deformity, or physical or mental condition.

(c) A license shall mean a certificate issued to a person licensed to practice certain professions affecting the public health as provided in title eight (8) of the Code of Iowa, 1931, and acts amendatory thereto.

Sec. 3. There is hereby established a board of examiners in the basic sciences of six (6) members authorized and directed to conduct a written examination of all persons who shall hereafter apply for a license to practice medicine and surgery, osteopathy, osteopathy and surgery, chiropractic or any other system or method of healing that may hereafter be legalized in this state; said examination shall cover the six (6) following basic sciences, viz.: 1—Anatomy; 2—Physiology; 3—Chemistry; 4—Pathology; 5—Bacteriology; 6—Hygiene.

Sec. 4. No person shall hereafter be eligible for examination or be permitted to take an examination for a license to practice medicine and surgery, osteopathy, osteopathy and surgery, chiropractic or any other system or method of healing that may be hereafter legalized in this state or be granted any such license until he has presented to the licensing board empowered to issue a license, a certificate of proficiency in the basic sciences as provided in this act. This requirement shall be in addition to all other requirements now or hereafter in effect with respect to the issuance of such license or licenses.

Sec. 5. Nothing in this act shall be construed to apply to persons holding licenses as physicians and surgeons, osteopaths, osteopaths and surgeons or chiropractors at the time this act takes effect; nor shall this act, at any time, be construed to apply to dentists, dental hygienists, nurses, pharmacists, optometrists, embalmers, podiatrists, barbers or cosmetologists practicing within the limits of their respective licenses or Christian Scientists. This act shall not apply to students regularly registered, enrolled and in attendance as of July 1, 1936, in accredited schools of medicine, osteopathy or chiropractic in the state of Iowa.

Sec. 6. The governor shall, with the approval of two-thirds of the senate in executive session, appoint a board of examiners in the basic sciences, hereinafter referred to as the "board," consisting of six (6) members learned respectively in the basic sciences named herein from the faculties of the universities and four (4) year colleges accredited by the Iowa State Board of Educational Examiners, who shall be appointed



two (2) for two (2) years, two (2) for four (4) years and two (2) for six (6) years from the date of their respective appointments. On the expiration of the term of any member the governor shall, with the approval of two-thirds of the senate in executive session, fill the vacancy or vacancies by appointment for a term of six (6) years; on the death, resignation or removal of any member the governor shall, with the approval of two-thirds of the senate in executive session, fill the vacancy by appointment for the unexpired portion of the term. No member of the board shall hold a degree in any of the healing arts. Not more than one (1) member of the board shall be appointed from the faculties of any one (1) of the universities of four (4) year colleges described herein.

Sec. 7. The board shall meet and organize, as soon as practicable, after appointment. It shall have power to elect officers from its members, to adopt a seal and to make such rules, in addition to the rules hereinafter specified, as it deems expedient to carry this act into effect. The board shall elect a chairman and secretary from its members.

Sec. 8. The secretary of the board shall keep a correct record of the proceedings of said board and the questions submitted in the examination of the applicant, and the applicant's answers thereto, and upon the granting of a certificate of proficiency in the basic sciences shall, at the time of granting said certificate, certify to the state department of health the application upon which such certificate was issued, together with the questions submitted in the examination of such applicant and the answers thereto and such secretary shall deposit with the department of health all records not needed for the current use of his examining board.

Sec. 9. The state department of health shall furnish the board with all articles and supplies required for the public use and necessary to enable said board to perform the duties imposed upon it by law. Such articles and supplies shall be obtained by the department in the same manner in which the regular supplies are obtained and the same shall be considered and accounted for as if obtained for the use of the department.

Sec. 10. The executive council shall furnish the board with a suitable office and quarters in which to conduct the examination held by said board at the seat of government.

Sec. 11. Each member of the board shall, in addition to necessary traveling and hotel expenses, receive ten (10) dollars per day for each day actually engaged in the discharge of his duties, including compensation for the time spent in traveling to and from the place of conducting the examination, and for a reasonable number of days for the preparation of examination questions and the reading of papers, in addition to the time actually spent in conducting examinations. The compensation and expenses of the members and other expense of the board shall be paid out of the fees received from applicants.

Sec. 12. The fee for examination or any re-examination by the board shall be ten (10) dollars, the fee for issuing of a certificate by authority of reciprocity, as provided herein, shall be ten (10) dollars. All fees shall be paid to the secretary of the board by the applicant at the time of filing application. The secretary shall pay all money received as fees into the state treasury to be placed in a special fund to the credit of the board. The state treasurer shall pay out of such fund the compensation and expense of the members and other expenses incurred by the board on vouchers signed by the president and secretary of the board.

Sec. 13. No person shall be eligible for examination for a certificate of proficiency in the basic sciences until he shall have furnished satisfactory evidence to the board that he has attained the age of twenty-one (21) years, is of good moral character and is a graduate of an accredited high school or possesses the educational qualifications equivalent to those required for graduation by an accredited high school, to be determined by the board.

Sec. 14. Any person desiring to take the examination for a certificate of proficiency in the basic sciences shall make application to the board, at least fifteen (15) days before the examination, on a form provided by the board. Such application shall be accompanied by the examination fee and such affidavits as are necessary to show the eligibility of the candidate to take such examination. All applications shall be in accordance with the rules of the board and shall be signed and verified by the oath of the applicant. Provided, that said application shall not contain questions to be answered by said applicant which will disclose the professional school he may have attended or what system of treating the sick he intends to pursue.

Sec. 15. The board shall give public notice of the time and place of all examinations to be held under this act and such notice shall be given in such manner as the board may deem expedient and in ample time to allow all candidates to comply with the provisions of this title.

Sec. 16. Said board shall meet at Des Moines and there conduct examinations in the basic sciences four (4) times each year respectively, on the second Tuesday in January, April, July and October. The examination shall be conducted in writing in such manner that the applicant shall be known by number only until such examination papers are read and the proper grade determined. The examination shall be of such a nature as to constitute a reasonable test as to whether the person so examined has such knowledge of the elementary principles of the basic sciences as might be acquired after the completion of a course of study of the following subjects for the number of hours specified:

Subject	Hours	Subject	Hours
Anatomy	400	Pathology	160
Physiology	200	Bacteriology	100
Chemistry	200	Hygiene	40

The board shall establish rules for conducting of all examinations, grading of examinations and passing upon the technical qualifications of applicants as shown by such examinations. An applicant to pass the examination must obtain a grade of not less than seventy (70) per cent in any one (1) subject and a total average grade of seventy-five (75) per cent in all subjects. If an applicant fails to attain the required grade in one or more subjects, he may be re-examined in the subject or subjects in which he failed, at any examination within one year without further application or examination fee. No part in the preparation of questions, the actual giving of the examinations or the grading of papers can in any way be delegated to any person other than a member of the board, or otherwise performed by any person not then a member of such board.

Sec. 17. Three (3) members of the board shall constitute a quorum for conducting examinations.

Sec. 18. The board shall issue a certificate of proficiency in the basic sciences to each of the successful applicants after examination, as provided in this act.

Sec. 19. Each certificate of proficiency in the basic sciences shall be in the form prescribed by the board, under the name and seal of the board and signed by its chairman and secretary.

Sec. 20. The board may, in its discretion, waive the examination and issue a certificate of proficiency in the basic sciences provided for herein and may accept in lieu of examination proof that the applicant has passed before a board of examiners in the basic sciences or by whatsoever name it may be known or before any examining or licensing board in the healing art of any state, territory or other jurisdiction under the United States, or of any foreign country, an examination in anatomy, physiology, chemistry, pathology, bacteriology and hygiene as comprehensive and as exhaustive as that required under authority of this act.

Sec. 21. Upon presentation to said Board of Examiners of a certificate from any college or university accredited by the North Central Association of Secondary Schools and Colleges that the person seeking a certificate of proficiency under the provisions of this act has completed a course of study in one or more of said basic sciences of the number of hours provided for in section sixteen (16) of this act and has attained a grade of seventy-five (75) per cent in said subject or subjects the said Board of Examiners shall waive examination in said subject or subjects, and if said applicant shall have completed a course of study in all of said basic sciences of the number of hours provided for herein and has attained an average grade of seventy-five (75) per cent in each of said subjects the Board of Examiners shall upon receipt of a certificate to that effect setting forth the grades of the applicant in each of said subjects as hereinbefore provided issue to said applicant a certificate of proficiency in the basic sciences as provided for under the Iowa Basic Science Law without further examination.

Sec. 22. Any person who shall practice the healing art without first having obtained a certificate of proficiency in the basic sciences or violate or participate in the violation of any provisions of this act shall be guilty of a misdemeanor and upon conviction thereof shall be punished by a fine of not more than five hundred (500) dollars, or by imprisonment in the county jail for not more than one (1) year or by both such fine and imprisonment. It shall be the duty of the attorney general and of the several county attorneys to prosecute violations of this act.

Sec. 23. No provision of this act shall be construed as repealing any statutory provision in force at the time of its passage with reference to the requirements governing the issuing of licenses to practice the healing art, or any branch thereof, but any board authorized to issue licenses to practice the healing art, or any branch thereof, may, in its discretion, accept certificates issued by the board of examiners in the basic sciences in lieu of examining applicants in such sciences, or may continue to examine applicants in such sciences as heretofore.

Sec. 24. Should any section, clause, sentence or provisions of this act be held to be invalid for any reason, such holding or decree shall not be construed as affecting the validity of any of the remaining portions of this act, it being the intent of the legislature that this act shall stand and the legislature would have adopted the remainder of this act notwithstanding the invalidity of any such section, clause, sentence or provision.

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#### INTER-STATE POSTGRADUATE MEDICAL ASSOCIATION OF NORTH AMERICA

The International Assembly of the Inter-State Postgraduate Medical Association of North America will be held in the beautiful Masonic Temple, Detroit, Michigan, October 14, 15, 16, 17 and 18, 1935, with pre-assembly clinics on Saturday, October 12, and post-assembly clinics Saturday, October 19, in the Detroit hospitals.

The association through its officers and members of the program committee extends a very cordial invitation to all physicians in good standing in their state and provincial medical societies to attend the assembly. An unusual clinical and didactic program including all branches of medicine and surgery and the specialties has been arranged by the program committee.

In cooperation with the Wayne County Medical Society and the Michigan State Medical Society and with the active support of the Detroit Convention and Tourist Bureau and the Detroit Board of Commerce, a most excellent opportunity for an intensive week of postgraduate medical instruction is offered by a very large group of acknowledged leaders in the profession. (See advertising page ii of this JOURNAL.)

Registration fee of \$5.00 admits all members of the profession in good standing. For more detailed information address, Dr. William B. Peck, Managing-Director, Freeport, Ill.



SPEAKERS BUREAU ACTIVITIES

POSTGRADUATE COURSE AT DAVENPORT

The Speakers Bureau Committee is presenting a postgraduate course on general therapeutics at Davenport, starting on Friday, September 13 and continuing through November 15. Meetings will be held weekly at the Lend-A-Hand Club on Fridays, with an hour of lecture from five-thirty to six-thirty; dinner from six-thirty to seven-thirty; and the final hour of lecture from seven-thirty to eight-thirty. The price of the entire course of ten lectures is \$10.00. Registration may be made with Dr. Henry A. Meyers of Davenport, who is in charge of the course.

The lecturers are outstanding men, and the course offers an exceptionally fine opportunity for instruction to the physicians in the vicinity of Davenport. It is expected that there will be about one hundred and twenty-five enrollments.

The course is as follows:

- 1. Treatment of Gastro-intestinal Disorders..... George B. Eusterman, M.D., Mayo Clinic
- 2. Some Modern Aspects of the Treatment of Hypertension..... R. W. Scott, M.D., Western Reserve
- 3. Treatment of Infections of the Genito-urinary Tract..... William F. Braasch, M.D., Mayo Clinic
- 4. Diagnosis and Treatment of Common Skin Disorders..... Oliver S. Ormsby, M.D., Chicago
- 5. Treatment of Diseases of the Gallbladder..... Evarts Graham, M.D., Washington University
- 6. Diagnosis and Treatment of Neuroses..... Walter Freeman, M.D., George Washington University
- 7. Recent Advances in Therapeutics..... Bernard Fantus, M.D., Chicago
- 8. Modern Treatment of Anemia..... William P. Murphy, M.D., Boston
- 9. Immunologic Therapy..... E. E. Irons, M.D., Rush Medical School
- 10. Surgical Treatment of Diseases of the Lungs and Pleura..... Howard L. Beye, M.D., University of Iowa

POSTGRADUATE COURSE AT CHEROKEE

Through the kindness and cooperation of the faculty of the College of Medicine of the State University of Iowa, the Speakers Bureau is enabled to present a combined course in medicine and surgery at Cherokee, beginning September 19 and continuing weekly through November 21. The meetings will be held at the Cherokee State Hospital; the first lecture will be given between four-thirty and six-thirty p. m.; dinner will be served at six-thirty; and the second lecture will be given from seven-thirty through nine-thirty. Forty hours of lectures in all will be given for the fee of \$15.00. Dr. C. L. Putnam of Holstein is in charge of arrangements, and registrations may be made with him.

The course is as follows:

- September 19 Gastro-intestinal Tract, medical..... Dr. Smith
- Gastro-intestinal Tract, acute abdomen..... Dr. Beye
- September 26 Genito-urinary Tract, medical—including nephritis ..... Dr. Fowler
- Genito-urinary Tract, surgery..... Dr. Alcock
- October 3 Pediatrics ..... Dr. Jeans
- Obstetrics, modern methods and treatment of abortions..... Dr. Plass
- October 10 Gynecology ..... Dr. Mengert
- Fractures, upper extremity..... Dr. Beye
- October 17 Ear, nose and throat, new developments..... Dr. Lierle
- Fractures, lower extremity..... Dr. Peterson
- October 24 Neurology ..... Dr. Van Epps
- Psychiatry for general practitioner..... Dr. Woods or Dr. Malamud
- October 31 Diseases of the heart..... (To be announced)
- The chest—medical ..... (To be announced)

November 7	The hand—anatomy.....	Dr. MacEwen
	The hand—surgery.....	Dr. Peterson
November 14	Diseases of the thyroid gland.....	Dr. Greene
	Clinical manifestations of certain endocrine disturbances.....	Dr. Boyd
November 21	Radiotherapy .....	Dr. Kerr
	Physiotherapy .....	Dr. Steindler

#### POSTGRADUATE COURSE AT CHARLES CITY

The following course on general therapeutics will be given at Charles City, starting Thursday, September 12, and continuing with weekly meetings through November 14. The price for the ten lectures is \$10.00. Registration may be made with Dr. J. B. Miner, Jr., of Charles City.

1. Treatment of Gastro-intestinal Disorders.....George B. Eusterman, M.D., Mayo Clinic
2. Diagnosis and Treatment of Diseases of the Coronary Arteries.....F. A. Willius, M.D., Mayo Clinic
3. Treatment of Infections of the Genito-urinary Tract.....William F. Braasch, M.D., Mayo Clinic
4. Diets and Disease.....Mary A. Foley, Mayo Clinic
5. Treatment of Diseases of the Gallbladder.....Evarts Graham, M.D., Washington University
6. Management of Complications of Pregnancy.....E. D. Plass, M.D., University of Iowa
7. Recent Advances in Therapeutics.....Bernard Fantus, M.D., Chicago
8. Modern Treatment of Anemia .....
9. Immunologic Therapy.....H. A. Reimann, M.D., University of Minnesota
10. Skin Disorders .....

#### POSTGRADUATE COURSE AT NEWTON

A course on cancer will be given at Newton, starting on Wednesday, September 18, and concluding November 20. Meetings will be held in the Maytag Hotel, with dinner being served at six-thirty, and the lecture being held from seven-thirty to nine-thirty. The price for the ten lectures is \$10.00, and registration may be made through Dr. Thomas D. Wright of Newton.

The following men will speak on the subjects listed:

1. Malignant Neoplasms of the Nervous System.....A. W. Adson, M.D., Mayo Clinic
2. The Present Status of Cancer Knowledge.....E. T. Bell, M.D., University of Minnesota
3. The Morbid Anatomy and Physiology of Malignant Tumors.....Richard Jaffe, M.D., Cook County Hospital
4. Cancer of the Skin: Diagnosis and Treatment.....James H. Mitchell, M.D., Chicago
5. Malignant Tumors of the Head and Neck: Diagnosis and Treatment.....Gordon New, M.D., Mayo Clinic
6. Malignant Tumors of Mesenchymal Tissue.....D. B. Phemister, M.D., Univ. of Chicago
7. Cancer of the Gastro-intestinal Tract.....O. H. Wangensteen, M.D., Univ. of Minn.
8. Malignant Tumors of Reproductive Tissue in the Male and Female.....H. L. Kretschmer, M.D., Chicago
9. Surgical Diagnosis and Treatment of Cancer.....Vernon C. David, M.D., Rush Medical School
10. Evaluation of Radiologic Diagnosis and Treatment.....Leo G. Rigler, M.D., University of Minnesota

#### SCHEDULE OF RADIO TALKS FOR SEPTEMBER

WOI—Wednesdays at 5:30 p. m.      WSUI—Mondays at 8:00 p. m.

September 4	Infantile Paralysis .....	J. N. Lande, M.D.
September 11	Care of Heart Patients.....	Evon Walker, M.D.
September 18	Appendicitis .....	D. C. Conzett, M.D.
September 25	The School Lunch.....	B. C. Hamilton, Jr., M.D.
October 2	Hobbies and Health.....	George B. Crow, M.D.



# WOMAN'S AUXILIARY NEWS

*Edited by the Press and Publicity Committee*

MRS. DEAN W. HARMAN, *Chairman*, Glenwood, Iowa

## AN EDUCATIONAL PROGRAM

With September comes the revival of our interest in club work. As members of medical auxiliaries a very definite responsibility falls to each of us; you as members, we as officers, because you have chosen us as leaders for the year.

Since I first became interested in auxiliary work, whenever I attempted to interest others, the questions first asked were: "What are you doing?", "Do your accomplishments justify your existence?", "Have you a plan?". These questions were difficult to answer because we were attempting to do those things needed in our own county groups; sometimes we found much to do,—sometimes little.

Occasionally a group disbands for lack of a plan. All of this has led to inquiries, questionnaires and such in an attempt to make deductions as to the needs of units, desires of members, and inquiries into other state programs. After careful consideration the state officers submit to you an educational program for use at your meetings and an approved public relations program that we believe can be adapted in part or in entirety to every group, large or small. That it is constructive, no one can deny. It is a departure from the old plan, and I believe it will be a stimulus to your group.

When your husband or another doctor's wife asks what auxiliary is doing, you will be able to make a comprehensive reply. However, the success of the plan depends on you as an auxiliary member. The time and thought involved in compiling it will be lost unless every member everywhere will give her best to make this plan her county's plan for the year. This plan is being mailed to your president, and I earnestly solicit your personal support of the proposed program.

I shall be happy to help at all times, answer any questions or help overcome any obstacles you may encounter in presenting it. The chairmen will supply all materials and also willingly assist in every way possible. The program follows:

### Educational Program

#### I. A Study of Vivisection and Antivivisection.

This subject so widely discussed by club women is one doctors' wives know in a general way. We know the advance in science is made possible through it and take it for granted that it will continue. The movement against vivisection is alarming. Only by a study of both angles can we intelligently discuss this question other club women know so much against. The material compiled by the American Medical Association on this is complete and comprehensive. We will furnish it to you upon request.

#### II. Smallpox and Tuberculosis in Iowa.

There is less illiteracy in Iowa than in any other state. Nevertheless, we have more smallpox per capita than the densely populated state of New York. The State Board of Health is anxious to have this knowledge more generally circulated. Let us first inform ourselves and then pass our information on.

How many active cases of tuberculosis exist in the state? What is the treatment? Where are the institutions? How does one gain entrance? What is the average cost to the state? This subject is inexhaustible. Therefore, we suggest your confining it to Iowa. A most interesting film can be secured demonstrating the sources of infection, etc., at a very small cost.

#### III. Socialized Medicine.

If your group is interested in the statistics on the findings of the American Medical Association on socialized medicine, they can be easily obtained. It would probably be best to have a doctor present this subject to you. It is interestingly informative.

#### IV. The Greatest Epidemic in History.

Where did it occur? How was it conquered? What were the greatest obstacles to overcome?

#### V. Presidents' Day.

An interesting program featuring a guest speaker could be arranged, and all the presidents of women's clubs invited to attend. This could be a luncheon or a tea, as you wish.

#### VI. Health Pamphlets.

A novel meeting might be one demonstrating the innumerable health pamphlets issued by our health department, federal government, insurance companies, etc. You would in this way have some idea of where to obtain authentic ones.

#### VII. The Practice of Medicine in Russia.

VIII. The Midwife in America Today; also the practice of midwifery in Iowa.

IX. One meeting with a book review as the feature of the program.

#### X. A social meeting reviewing the year's work.

Every county is expected to use either a portion of, or the program as a whole. Counties are requested to plan their programs for the year and report the topic to be used for each meeting. Requests for material desired before October first are to be mailed to the state president and after that date to Mrs. Channing G. Smith, Granger, Iowa.

An "Auxiliary" is that which helps. If then, we as an organization are to be an auxiliary, it is essential that we emphasize our educational program and inform ourselves concerning matters of approved methods of presenting some authentic information to our communities.

Ruth M. Hennessy, President.

## SOCIETY PROCEEDINGS

### Appanoose County

The Appanoose County Medical Society was host to more than fifty guests at a dinner meeting held in Centerville, Wednesday, August 7. After the banquet which was served at St. Joseph's Hospital, the following scientific papers were presented: Malignancy of the Urinary Tract, Nathaniel G. Alcock, M.D., of Iowa City; and Anatomic Variations in the Abdomen, Ewen M. MacEwen, M.D., newly appointed dean of the College of Medicine, University of Iowa.

F. B. Leffert, M.D., President.

### Grundy County

The Golf Club east of Grundy Center was the setting for an afternoon meeting of the Grundy County Medical Society, Monday, August 5. J. E. Rose, M.D., of Grundy Center, reported on papers and activities of the recent annual session of the Minnesota State Medical Society.

M. H. Thielen, M.D., President.

### Hardin County

George M. Crabb, M.D., of Mason City, was guest speaker for the Hardin County Medical Society, at a meeting held in Iowa Falls, Thursday, August 1. Dr. Crabb spoke on Empyema.

### Linn County

The Linn County Medical Society will open its fall meetings on Thursday, September 12, in Cedar Rapids, with John F. Erdmann, M.D., of New York City, as guest speaker. Dr. Erdmann will speak on Cholecystitis, Cholangitis, and Cholelithiasis. His paper will be discussed by Drs. Prince E. Sawyer of Sioux City, Howard L. Beye of Iowa City, and J. J. Murphy of Cedar Rapids. Included on the program will be a paper on Medical Laws in Relation to Medical Practice in Iowa, presented by Ivan Sheeler, M.D., of Cedar Rapids.

Among outstanding speakers which the Linn County Medical Society has secured for subsequent meetings are Harold B. Cushing, M.D., of Montreal, Canada, on October 16; Edward Jackson, M.D., of Denver, Colorado, November 14; and Arthur E. Hertzler, M.D., of Halstead, Kansas, December 12.

T. F. Hersch, M.D., Secretary.

### Scott County

Surgery of the Gallbladder was discussed by Waltman Walters, M.D., of the Mayo Clinic, at the first meeting of the Scott County Medical Society to be held after the summer recess. The meeting took place Tuesday, September 3, at the Lend-A-Hand Club in Davenport.

### Upper Des Moines Medical Society

The summer meeting of the Upper Des Moines Medical Society was held at the Hotel Orleans on Spirit Lake, Thursday, August 15. A full day's program was presented, beginning at eleven o'clock in the morning, when a conference of all officers in the third district met to be addressed by Drs. Thomas A. Burcham and Robert L. Parker. The afternoon program consisted of the following papers: Medical Observations During a Recent European Trip, Charles W. Mayo, M.D., of the Mayo Clinic, Rochester; Fibromyomata, Indications and Treatment, illustrated with motion pictures, Joseph B. Priestley, M.D., of Des Moines; Serologic Therapy in the Treatment of Appendicitis with Rupture and Peritonitis, James T. Priestley, M.D., of the Mayo Clinic, Rochester; and Differential Diagnosis of Lesions in the Right Side of the Abdomen, illustrated with lantern slides, A. G. Fleischmann, M.D., of Des Moines.

Approximately one hundred physicians and guests attended the banquet, over which Daniel J. Glomset, M.D., of Des Moines, presided as toastmaster, introducing the speakers of the evening, Thomas A. Burcham, M.D., of Des Moines, president of the State Society, and Walter L. Bierring, M.D., of Des Moines, past president of the American Medical Association.

Officers of the organization are Dr. W. E. Bradley of Estherville, president; and Dr. Don F. Rodawig of Spirit Lake, secretary and treasurer. Arrangements for the successful meeting were ably conducted by Dr. George H. Keeney of Mallard, vice president, and Dr. Ruth F. Wolcott of Spirit Lake.

### PERSONAL MENTION

Dr. G. M. Ellison, who for the past four years has practiced medicine at Sabula, has located in Clinton, where he will open offices in the Wilson building.

Dr. W. W. Bowen of Fort Dodge spoke before the Clear Lake Rotary Club, Thursday, August 15, on "Heredity."

Dr. C. D. N. Gilfillan has located in Fremont for the practice of medicine. Dr. Gilfillan was graduated from the College of Medicine, University of Iowa, and for the past two years has been an interne in a hospital in San Francisco, California.

Dr. J. D. McCloskey, another recent graduate of the College of Medicine, University of Iowa, has associated himself in the practice of medicine with Dr. A. L. Braden of Wellman. Dr. McCloskey also comes to Iowa from the west, having interned at the St. Vincent Hospital in Los Angeles, and the Santa Clara County Hospital in San Jose, California.



**Dr. W. B. Phillips** of What Cheer, after practicing in that vicinity for seven years, has moved his practice and family to Cedar Rapids, where he has established an office at 1017 First Avenue E.

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**Dr. J. K. Stepp**, formerly of Jesup, has located in Manchester.

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**Dr. Rodney C. Wells** arrived recently in Marshalltown from Detroit, Michigan. Dr. Wells, a former Marshalltown resident, plans to enter the practice of medicine there about the middle of September. He was graduated in 1932 from Rush Medical College, Chicago, and since that time has served as an interne in the Harper Hospital, Detroit, the University Hospital, Cleveland, and the Children's Hospital of Michigan, Detroit.

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**Dr. John J. Simones**, a graduate of the College of Medicine, University of Iowa, has entered the practice of medicine in Dubuque, as an associate of Dr. C. E. Loizeaux.

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**Dr. Braddock D. Roberts** has purchased the drugs and equipment of the late Dr. E. C. Allen of Wayland, and plans to practice in that vicinity at once. Dr. Roberts was graduated in 1934 from the College of Medicine, University of Illinois, and for the past year has been in the department of medicine, Henry Ford Hospital, Detroit, Michigan.

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#### MARRIAGES

The marriage of Miss Flora Estelle Otto of Carroll, and Dr. Byron I. Mueller of St. Charles, took place at the United Presbyterian Church in Carroll, Monday, August 12. Following a wedding trip to Chicago, they will be at home in St. Charles where Dr. Mueller recently located for the practice of medicine.

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#### DEATH NOTICES

**Bailey, William Warnock**, of Davenport, aged sixty-nine, died August 6, following an illness of heart disease. He was graduated in 1897 from Marion-Sims College of Medicine, St. Louis, and at the time of his death was a member of the Scott County Medical Society.

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**Bradley, Harry Merritt**, of Manchester, aged sixty-six, died August 11, following a short illness. He was graduated in 1894 from Columbia University College of Physicians and Surgeons, New York City,

and at the time of his death was a member of the Delaware County Medical Society.

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**Morse, John Ferdinand**, of Nevada, aged sixty-three, died August 8, following a stroke of apoplexy. He was graduated in 1899 from the American Medical Missionary College, Chicago, and at the time of his death was a member of the Story County Medical Society.

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**Stech, James W.**, of Council Bluffs, aged forty-six, died suddenly August 22, as the result of a heart attack. He was graduated in 1913 from Creighton University School of Medicine, Omaha, and at the time of his death was a member of the Pottawattamie County Medical Society.

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#### MISSISSIPPI VALLEY MEDICAL SOCIETY

The first annual meeting of the newly formed Mississippi Valley Medical Society will be held at Quincy, Illinois, October 2, 3, 4. The meeting and commercial exhibit will be held in the new and thoroughly modern Lincoln-Douglas Hotel. There will be morning, afternoon and evening sessions of a most practical character. The entire program is arranged to appeal especially to the general practitioner.

Among the eminent clinicians on the program are:

Isaac A. Abt, M.D., Professor of Pediatrics, Northwestern University School of Medicine, Chicago.

Fred H. Albee, M.D., Professor of Orthopedic Surgery, New York Postgraduate Medical School and Hospital, New York.

W. Wayne Babcock, M.D., Professor of Surgery, Temple University School of Medicine, Philadelphia.

Hugh Cabot, M.D., Professor of Surgery, University of Minnesota Graduate School of Medicine, Minneapolis.

Arthur C. Ernstene, M.D., Cardiologist, Cleveland Clinic, Cleveland.

Frederick A. Figi, M.D., Associate Professor of Laryngology, University of Minnesota Graduate School of Medicine, Minneapolis.

Thomas E. Jones, M.D., Gynecologist, Cleveland Clinic, Cleveland.

Wm. C. MacCarty, M.D., Professor of Pathology, University of Minnesota Graduate School of Medicine, Minneapolis.

Albert Soiland, M.D., Chairman, Malignancy Board, California Hospital of Los Angeles.

These men will each give two or three practical lectures or clinical demonstrations and will be assisted by twenty-seven specialists from Illinois, Missouri, and Iowa, who will conduct a clinical lecture course. There will be a total of over fifty lectures and demonstrations for the three day session. All ethical physicians are cordially invited to attend the meeting and a detailed program may be obtained from Harold Swanberg, M.D., Secretary-Treasurer, 211-224 W. C. U. Bldg., Quincy, Illinois.

# HISTORY OF MEDICINE IN IOWA

*Edited by the Historical Committee*

DR. FRANK M. FULLER, Keokuk  
DR. JOHN T. MCCLINTOCK, Iowa City  
DR. PAUL W. VAN METRE, Rockwell City

DR. TOM B. THROCKMORTON, Des Moines  
DR. WALTER L. BIERRING, Des Moines  
DR. WILLIAM JEPSON, Sioux City

## A History of Medicine in Jefferson County, Iowa

JAMES FREDERIC CLARKE, M.D., F.A.C.S., Fairfield

(Continued from last month)

Addendum—No. 18. Bonnell, F. S. Frank Sumner Bonnell attended four full sessions in the Jefferson Medical College of Philadelphia, and received the doctor of medicine degree on June 7, 1913.

30. Clarke, James Frederic: (1889 to this date). Born in Fairfield, 1864. Attended Parsons College. Graduated B.S., University of Iowa, 1886; M.A. University of Iowa 1889. Graduated from the Medical College of the University of Pennsylvania in 1889; two years an interne in the Philadelphia General Hospital. Postgraduate work in Johns Hopkins University and University of Göttingen, Germany, and several seasons at the New York Post Graduate School. Dr. Clarke entered the Spanish War as major and surgeon of the 49th Iowa Infantry. Detached service in charge of medical wards of the Second Division Hospital of the Seventh Army Corps in Florida and Cuba. While in Florida Dr. Clarke obtained the first employment of trained female nurses in the United States Army in field hospitals. Dr. Clarke organized Unit R for the World War and served as major and lieutenant colonel in France in Base Hospital No. 32, at Contrexeville and Red Cross Hospital No. 5 in Paris, both of which hospitals he commanded in the final weeks of this service. Was lecturer of Hygiene in the State University of Iowa, Colleges of Medicine and Dentistry. Also lectured in Parsons College. Dr. Clarke was in the main responsible for the building of the Jefferson County Hospital in Fairfield. Served as mayor of Fairfield and represented this county in the General Assembly 1906-07. Has twice been vice president of the Iowa State Medical Society and president of the Des Moines Valley Medical Association, and the South-eastern Iowa Medical Society. Is a fellow of the American College of Surgeons, of the Iowa Academy of Science, and the American Medical Association. Made the first x-ray pictures in Jefferson County; did the first appendectomy and introduced organotherapy in the county by developing infantile myxedema by thyroid feeding in 1901. Was for thirty years local surgeon of the C. B. & Q. and of the C. R. I. & P. companies. He was the first president of the Iowa Assembly of the Agassiz Societies and the founder of the first golf club in Iowa; the founder and three years President of the Fairfield Rotary Club. His fad is the studying of fungi.

31. Clement, Harold Eugene: (1891-1908). Born in Wisconsin in 1853. educated at Vanderbilt University in Tennessee. Began his medical studies at the Vanderbilt University and completed them at Keokuk

College in 1884. Practiced in Richland and Trenton, Iowa, coming to Glasgow in 1891. In 1908, because of ill health was forced to move to Texas. Tried to retire from practice in Sinton, Texas, but was continuously consulted and gave freely of his advice. Died in 1912 in his fifty-ninth year. The writer remembers Dr. Clement as a genial, likable, well educated man who came to an untimely death through the hardships and exposure of a country medical practice.

32. Cole, D. B.: (1849?). Practiced in Fairfield about 1849. Was associated with Dr. N. Steele and was a druggist or chemist. No data. Moved to Des Moines in 1851.

33. Collins: (1854?-65?). No data. Practiced in Libertyville. Mentioned frequently in Dr. Shaffer's diary.

34. Conner, Warren Hamilton: (1895-1929). Born in New York, 1855. Graduated Iowa State University College of Homeopathy 1893. Practiced in Fairfield 1895 to 1929. Moved to California in 1929 where he now lives retired.

35. Conrad, Albert Everett: (1897-98). Born in Iowa in 1869. Graduated at the Hahnemann College, Chicago, 1895. Practiced in Pleasant Plain. No data. Died in Decorah, Iowa, 1929.

36. Converse, C. V.: (1887?). No data. Practiced at Libertyville for two years. Lived at Hillsboro, Van Buren County, before and after his Libertyville residence. Died in Hillsboro. Was a graduate in medicine and was well read.

37. Cook: No data. Mentioned April 10, 1865, as a consultant in Fairfield by Dr. J. M. Shaffer.

38. Cook, K. G.: (1929 to this date). Born in Illinois in 1901. He graduated from the Carthage, Illinois, College; took the degree M.S. at the University of Illinois in 1924; graduated from Rush Medical College 1928, and was an interne in the Illinois Central Hospital, Chicago, for the year 1928-29. Began practice in Fairfield in 1929.

39. Cottle, William Wallace: (1846-1880). Born in Ohio in 1817. Of English-Quaker ancestry. Lived on a farm, later learned the carpenter trade and when twenty-one studied medicine two years with Dr. Benjamin Kester and practiced in Ohio five years. Came to Glasgow in 1846. During 1847-48 took medical lectures in the Missouri University and graduated. Returned to Glasgow and practiced twenty years. Represented Jefferson County in the state legislature 1860-61. Retired in 1868 and devoted himself to business and banking in Iowa and Missouri. Located



in Fairfield in 1877 and lived here until his death in 1880. Dr. Cottle, erect, six feet tall, weighing two hundred pounds, was quiet and reserved. Had a deep sense of justice, honesty and honor. Was public spirited and generous in private and public affairs. Was held in high esteem by all who knew him.

40. Crow, Ira N.: (1921 to this date). Born in Iowa in 1881. He took two years premedical work at Iowa City Academy. Graduated from College of Medicine, University of Iowa, 1908. Member of faculty in this college 1905 to 1914. Took his master's degree in 1914. Postgraduate work at Harvard 1910. With Hospital Unit R in France as lieutenant and captain in Medical Corps, United States Army. Detached service regimental surgeon 168th Infantry of 42nd Division. Wounded in action, June, 1918. In evacuation hospital and Base Hospital No. 32, Contrezeville. Had graduate work in New York City after his discharge and came to Fairfield in 1921. With his fine education and experience Dr. Crow has received many medical honors. He is a fellow of the American College of Surgeons; secretary of the local medical society for six years; chairman of the Section of Ophthalmology and Otology, State Medical Society, 1925; Chairman, Committee on Nurses Training 1930-31-32; Secretary of the Southeastern Iowa Medical Society, 1933; President of the Tri-County Medical Society in 1934. Active, progressive, always a student, Dr. Crow is taking a prominent place in his profession. He has no avocation, but devotes all his time to his professional labors.

41. Crumley, A. C.: (1900-03). Practiced in Pleasant Plain from 1900 to 1903. Came from Missouri and returned to Missouri. No data.

42. Curfman: (1852). No data. Mentioned in Dr. Shaffer's diary.

43. Davis, Ezra: (1870?). No data. Practiced in Glasgow. He was a brother to Dr. Moss Davis. Moved to Abingdon from Glasgow. Was a kind and sympathetic man.

44. Davis, Moss: (1870?). No data. Practiced in Glasgow. Was a brother of Dr. Ezra Davis. Died in Boulder, Colorado, in 1890.

45. Davis, S. K.: (1888 to this date). Born on a farm in Pennsylvania, 1863. Graduate Parsons College and of the Pleasant Plain Academy and of the University of Iowa. Read medicine with Dr. David Stever in Fairfield. Graduate from the College of Physicians and Surgeons, Keokuk, in 1888. Began practice in Libertyville in 1888, where he has practiced successfully to this date. President of the Des Moines Valley Medical Society and of the Southeastern Iowa Medical Society. President of the local bank and of the school board. Member of the American Association for the Advancement of Science and of the American Genetics Association. Has two sons, both physicians. Dr. Davis is an exceptionally well educated man and is a philosopher and poet. He is the leading citizen of his community. An omnivorous reader of the best books, he is a valued member of social and literary clubs. He was eager to serve in the World War and would have been a member of Hospital Unit R but failed in his physical examination. Quiet and unassuming, with a high sense of honor, he is altogether an ideal citizen.

46. Day, A. L. No data. Practiced in Blackhawk township.

47. Dean, Elijah L.: (1844-50). Born in Pennsylvania in 1808. No data. Moved to Wapello County in 1850 and died there in 1879.

48. Dearduff. No data.

49. DeArmond. No data. Practiced in Packwood.

50. DeMarsh, Clark C.: (1902-03). Practiced in Perlee and Fairfield. Graduate Homeopathic Medical College, University of Iowa, 1891. Began practice in Ottumwa, Iowa. Retired from practice and took up photography in Fairfield. Died in Fairfield in February, 1934.

51. Dial, W. C.: (1862?-64). No data except an account book and death notice. Took Dr. P. N. Wood's practice while he was in the Army of the Civil War. Probably came from Ohio. Excellent notice of him in *Annals of Iowa*, Volume 14, No. 7, by Hon. C. J. Fulton. Had a large practice among the most prominent citizens of Fairfield. Died September 1, 1864, at the early age of thirty-one years, "loved and respected by all who knew him". Probably buried at Mt. Pleasant.

52. DuBois, John W.: Practiced in Batavia. No data. Moved to South Dakota.

53. DuBois, Ruben: (1892?). Practiced in Batavia. No data. Moved to Kansas.

54. Dunkel, George Kasper: (1905 to this date). Born in 1879. Graduate University of Iowa, College of Medicine, 1905. Began practice in Fairfield and is still an active practitioner here.

55. Elms, B. C.: (1891?). Born, 1843. Graduated, Chicago Homeopathic School of Medicine, 1880. Professor of physical diagnosis in the same school. Practiced in Fairfield from 1891 for a time. Died in 1915 in Chicago.

56. Emerson, C. D.: (1893?). No data. Graduated from the Keokuk Medical College in 1893. Practiced in Abingdon, then moved to Packwood. Was greatly handicapped by extreme deafness.

57. Fellows: No data. Practiced in Fairfield about 1880.

58. Ferris, Thomas, E. V.: (1880-1882). Born in Mt. Pleasant, Iowa, in 1846. Read medicine with his father. Began practice in 1874. Attended St. Louis Medical College in 1876. Moved to Lockridge in 1880 and practiced there two years. In 1882 quit the practice of medicine and moved to Fairfield, where he still lives in retirement.

59. Fleenor, John G.: (1889). Born in 1853. Graduated from College of Physicians and Surgeons, Keokuk, Iowa, in 1888. Practiced in Pleasant Plain in 1889. Moved to Pritchell, Colorado.

60. Fordyce, Winfield: (1872-1928). Born in Jefferson County in 1848, on a farm in Liberty Township. Educated in local schools. Read medicine in 1869 with Dr. J. M. Norris, of Birmingham. Attended College of Physicians and Surgeons, Keokuk, Iowa, 1871-72. Located in Glasgow. After two years practice returned to Keokuk for further study, 1877-78. Dr. Fordyce was a splendid example of the old school family physician: "The idol of the pioneer home, the theme of poets, the hero of romances". By a gunshot accident he lost the third and fourth fingers of his right hand. After beginning obstetric practice he found this deformity a great advantage in manual examinations. He considered his accident "fortunate". Dr. Fordyce had little faith in the "germ theory" of disease and in many "new fangled" ideas that were distressing the medical profession. He progressed, however, far beyond the days of universal bleeding and salivation. The writer is greatly indebted to Dr. Fordyce for the incidents and folk stories of the preceding history. His only official services were his many years on the Insane Commission and on the "Exemption Board" for the drafted men of the World War. For these positions his honor and unswerving fidelity to right and justice made him an ideal public servant. No one ever questioned the integrity of his decisions. One illuminating incident known to the writer will illustrate the character of this good man. A neighbor doctor, well known as an abortionist, died. The friends came to Dr. Fordyce and asked him to be one of a group of doctors to act as pall bearers. His reply to this: "I will go to the funeral of Dr. — as a neighbor should, but I will be damned if I will help carry that old abortionist to the grave as a member of the medical profession." Dr. Fordyce died in Fairfield April 16, 1928, honored by everyone who knew him. To live and serve one community for

fifty years is a rare privilege. Always to be prompt in business obligations; to be fair and just to all citizens; to support every movement for community improvement; these are the qualities of an unusual man such as was Winfield Fordyce.

61. Freeman, B. F.: (1858?). No data. Practiced in Brookville. Died in 1860.

62. Folsom, W. Z.: (1887). No data. Practiced in Pleasant Plain in 1887.

63. Gabbert, B. F.: (1885?). No data. Practiced in Batavia. Graduated in Keokuk, Iowa, 1885. Moved to Missouri and died there.

64. Gablesen, A. No data. Practiced in Merrimac.

65. Gantz, Byron Noble: (1887). Born in 1860. Graduated from the "General Medical College" (homeopathic) Chicago, 1885. Dr. Gantz seems to have been for years an active believer in birth control. Finally the federal court, objecting to his method of practice, sent him to Fort Madison, where he now resides. As far as we can learn, he is the only doctor of Jefferson County ever convicted of a felony.

66. Gaumer, James Stewart: (1906 to this date). Born in Victor, Iowa, 1872. Graduated from Parsons College with the degree B.S. Obtained his professional degree from Rush Medical College in 1900. Began practice in Danville, Iowa, and moved to Fairfield in 1906. Before his medical course Dr. Gaumer taught country schools. In one he received \$20.00 a month for a three-month term. Served in the war with Spain as a sergeant of Company M in Florida. Helped to establish the Jefferson County Hospital. Served as first lieutenant in the National Guard on the Mexican Border before the World War. Is a fellow of the American College of Physicians and belongs to national, state and district societies. Taught obstetrics to the Nurses Training School of the Jefferson County Hospital throughout the existence of that school. Dr. Gaumer's hobby is Masonry. As a Mason he has wide acquaintance and has held high offices. He is highly respected throughout Jefferson County. Has lived an honorable, industrious life and is an excellent, dependable citizen. His labors for the county medical society have been preëminent. Is concerned with every infraction of medical ethics and always intolerant of cultists who prey on the credulity of the people.

67. Gittler, Ludwig: (1930 to this date). Born in Germany, 1898. Lived in Nuremburg until 1924, when he came to the United States. Had an excellent education, graduating after nine years' study in the gymnasium in 1917. Had four years at the University of Erlangen at which institution he took the state's examination in medicine in 1922. Interned in the Municipal Hospital in Nuremburg, 1923. Interned North Chicago Hospital. Assistant physician in hospitals in Erlangen. Pathologist and x-ray substitute director of Jackson Park Hospital, 1925-26. Industrial clinic, Detroit, Michigan, 1927. General practice in Chicago in 1928. After this most excellent training Dr. Gittler came to Fairfield in 1930, and is now in active practice.

68. Graber, Frederic J.: (1900). Born September 24, 1868, in Jefferson County. Read medicine with Dr. John Norris, Birmingham. Graduated Keokuk Medical College, 1891. Practiced in Fairfield in 1900. Moved to Stockport, Iowa, where he is still in practice.

69. Graber, Harold Elwood: (1927 to this date). Born in Stockport, Iowa, 1899. Father and one brother physicians. Graduated with the degree M. D., 1925. Resident physician in the Iowa University Hospital, 1925-26. Clinical assistant in the same institution, 1926-27. Began practice in Lockridge, 1927, and moved to Fairfield in 1930, where he has since had an active practice. Dr. Graber is a Phi Beta Pi, a Mason and a first lieutenant in the Medical Corps of the Iowa National Guard. With a

fine education and excellent training, Dr. Graber has begun a promising career. He has a pleasing personality and his confreres predict for him a useful life.

70. Graham: (1862-68). No data. Thought to be the first doctor who resided in Salina.

71. Green, Wesley Johnson: (1840-69). Born in Pennsylvania, 1818. Read medicine with uncle in Virginia. Came to Jefferson County from Pennsylvania and practiced in the "Rich Woods." Was also a farmer. Died in Fairfield in 1906, many years retired from the practice of medicine.

72. Grove, Axel: No data. Practiced for a time in Lockridge.

73. Grove, Emil Gustaf: (1896-1924). Born in Jefferson County, 1872. Graduated in medicine from the Keokuk Medical College, 1896. Began practice in Fairfield in 1896, where he practiced until 1924, when he moved to Boone, Iowa, where he is now in active practice.

74. Hague, Albert Smiley: (1900-23). Born on a farm in Jefferson County, 1872. Graduated from the Keokuk Medical College in 1896 with a remarkable record. His grades were 100 per cent in every examination of his entire course. Practiced in Grand Ridge, Illinois, until 1900, when he came to Fairfield and practiced here until his death in 1923. Was fond of children and specialized in children's diseases to some extent though he maintained a general practice. Dr. Hague was a successful business man and purchased much Iowa land. In 1917 he established the "Revelenta Farms," near Fairfield, where he raised pure-bred livestock. His shorthorn herd was said to be the best in Iowa. Dr. Hague told the writer that his greatest pleasure in life was the acquiring of wealth. He sacrificed himself at all times in accomplishing this end. In the medical profession his type is rare, for most doctors are poor business men. Dr. Hague pursued his ideal at every opportunity. When confined to bed with illness he bemoaned his inability to do active work.

75. Hall: (1853-1856). No data. Practiced in Locust Grove Township. Mentioned as a consultant in Dr. Shaffer's diary in 1853 and 1856.

76. Hall, R. R.: (1880?). Practiced medicine in Fairfield, about 1880. No data. The writer remembers, as a boy, seeing his office walls covered with anatomic charts. His office was called, by his rivals, "The Health Factory." His excuse, to a patient, for the then unusual charge of \$10.00 for opening an abscess, was that the knife was of "pure imported English steel."

77. Hammond, Samuel F.: (1880-87). Born in Ohio in 1854. Came to Jefferson County with his parents in 1856 and lived on a farm north of Fairfield. Attended the country schools and private schools and taught country schools. Read medicine with Dr. P. N. Woods and graduated from Rush Medical College in 1880. After graduation he formed a partnership with Dr. Woods, which lasted until Dr. Hammond's death in 1887.

(To be continued)

#### CORRECTION

The July, 1935, issue of the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY carried an erroneous death notice of Dr. D. J. Townsend of Lohrville. Some time ago Dr. Townsend suffered a stroke of paralysis, and was confined to his bed for several days. His death was reported in several newspapers, and it was through this medium that the incorrect report was received. The JOURNAL takes this opportunity to rectify its mistake and to wish Dr. Townsend many more years of continued happy life and service.



# THE JOURNAL BOOK SHELF

## BOOKS RECEIVED

**THE AMERICAN ILLUSTRATED MEDICAL DICTIONARY**—By W. A. Newman Dorland, M.D., Seventeenth edition, revised and enlarged. Octavo of 1573 pages with 945 illustrations. W. B. Saunders Company, Philadelphia and London, 1935. Price, \$7.50.

**ANNUAL REPRINTS OF THE REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR 1934**, with the comments that have appeared in *The Journal*. Press of the American Medical Association, Chicago, 1935. Price, \$1.00.

**ARTHRITIS AND RHEUMATOID CONDITIONS**—Ralph Pemberton, M.D., professor of medicine, Graduate School of Medicine, University of Pennsylvania. Second edition, thoroughly revised. Illustrated with 69 engravings. Lea & Febiger, Philadelphia, 1935. Price, \$5.00.

**THE AUTONOMIC DISEASES OR THE RHEUMATIC SYNDROME**—By T. M. Rivers, M.D. Dorrance & Company, Philadelphia. Price, \$3.00.

**CLINICAL LABORATORY METHODS AND DIAGNOSIS**—By R. B. H. Gradwohl, M.D., director of laboratories, St. Louis County Hospital. With 328 illustrations and 24 color plates. C. V. Mosby Company, St. Louis, 1935. Price, \$8.50.

**CLINICAL MANAGEMENT OF SYPHILIS**—By Alvin Russell Barnes, M.D., chief of Congenital Luetic Clinic, New York Hospital. The Macmillan Company, New York, 1935. Price, \$1.50.

**THE CRIPPLED AND THE DISABLED**—By Henry H. Kessler, M.D., Newark, New Jersey. Columbia University Press, 2960 Broadway, New York City, 1935. Price, \$4.00.

**DISEASES OF THE NERVOUS SYSTEM**—By Smith Ely Jelliffe, M.D., formerly professor of psychiatry, Fordham University, New York; and William A. White, M.D., superintendent, St. Elizabeth's Hospital, Washington, D. C. Sixth edition, 1175 pages, illustrated with 497 engravings. Lea & Febiger, Philadelphia, 1935. Price, \$9.50.

**DISEASES OF THE SKIN**—By Richard L. Sutton, M.D., professor of dermatology, University of Kansas; and Richard L. Sutton, Jr., M.D., assistant in dermatology, University of Kansas. Ninth edition, revised and enlarged, with 1310 illustrations and eleven colored plates. C. V. Mosby Company, St. Louis, 1935. Price, \$12.50.

**THE DOCTOR AND THE PUBLIC**—By James Peter Warbasse, M.D., Brooklyn, New York. Paul B. Hoeber, New York, 1935. Price, \$5.00.

**ELECTROTHERAPY AND LIGHT THERAPY**—By Richard Kovacs, M.D., clinical professor and director of physical therapy, Polyclinic Medical School and Hospital, New York. Second edition, enlarged and thoroughly revised. Octavo of 696 pages, illustrated with 263 engravings. Lea & Febiger, Philadelphia, 1935. Price, \$7.50.

**EMOTIONS AND BODILY CHANGES**—By H. Flanders Dunbar, M.D., Ph.D., departments of medicine and psychiatry, Columbia University, Columbia University Press, New York, 1935. Price, \$5.00.

**INTERNATIONAL CLINICS**—Edited by Louis Hamman, M.D., Johns Hopkins Hospital, Baltimore. Volume II, Forty-fifth Series. J. B. Lippincott Company, Philadelphia and London, 1935.

**INTERNATIONAL MEDICAL ANNUAL**—A Year Book of Treatment and Practitioner's Index. Edited by H. Letheby Tidy, M.D., and A. Rendle Short, M.D. William Wood and Company, Baltimore, 1935. Price, \$6.00.

## BOOK REVIEWS

### INTERNATIONAL CLINICS

Volume IV, Forty-fourth Series, edited by Louis Hamman, M.D., visiting physician, Johns Hopkins Hospital. J. B. Lippincott Company, Philadelphia and London, 1934. Price, \$3.00.

Maintaining the high standard of efficiency long established, the editor of this series of these clinical volumes has collected in this particular issue many essays and articles of exceptional value. Particularly pleasing to the reviewer was the very complete discussion of Vitamin B from the clinical aspect by Dr. George R. Cowgill; the article entitled "Non-diabetic Glycosuria" by Dr. Alexander Marble; and a contribution to gynecology by Dr. Karl H. Martzloff in his discussion of the recognition of early cancer of the cervix uteri.

There are a total of sixteen clinical papers presented.

### HOW TO PRACTICE MEDICINE

By Henry W. Kemp, M.D., New York. Paul B. Hoeber, New York, 1935. Price, \$2.50.

Acting upon the thought that the average medical student or newly graduated physician has little insight into the problems of medical practice, Dr. Kemp has prepared this small volume, setting forth the solution to these problems in detail. He offers suggestions concerning the selection of the location, the detailed arrangements of an office and its equipment,

the physician's car and his personal appearance, the office attendant and the relationship of the physician to his neighborhood druggists and his fellow practitioners. In other chapters he discusses the relationship of the physician to his patients, to his medical society, and to the religious and political organizations of his city. He discusses at some length the relations of the physician toward women and adolescent patients, confinements and the preparation of prescriptions.

While many of the suggestions made in the book are definitely more applicable to a physician contemplating a large city practice, such as that enjoyed by the author (New York) and would require modification for use in smaller cities of the mid-west, still the volume is the most complete and useful of its sort which has come to our attention. It has been written in a thoroughly readable fashion, in fact, in many parts, his statements are so direct and curt that they bear quotation. For example, the closing sentence of his introduction reads: "Have one God, one office, one wife and one price, and you will be saved most of the annoyances in life." Again, the closing sentence in his chapter on "House Calls", is "A patient likes to feel that his is the most important case that you are treating at the time."

While this work has been written largely for the recent graduate, internes and fourth-year medical students, any physician who has not been successful to a considerable degree in his practice, can no doubt obtain valuable suggestions from the reading of this small volume.

# ANNUAL REPORT OF THE SURGEON GENERAL OF THE PUBLIC HEALTH SERVICE OF THE UNITED STATES

For the fiscal year 1934. United States Government Printing Office, Washington, 1934. For sale by the Superintendent of Documents, Washington, D. C. Price, seventy-five cents.

At the conclusion of each fiscal year and in accordance with an act of Congress, the Secretary of the Treasury each year files with the Speaker of the House of Representatives the annual report of the Surgeon General of the Public Health Service of the United States. The report covers the activities of this department, including the divisions of scientific research, domestic quarantine, foreign and insular quarantine, division on sanitation, venereal disease, and mental hygiene.

To the physician the most interesting part of the report probably lies in the report of the division on scientific research, which gives an account of the division's work in cancer, epidemic encephalitis, heart disease, leprosy, malaria, et cetera. In this particular number the work of the National Institute of Health in conjunction with the Chicago City Health Department on amebic dysentery is particularly noteworthy.

## YEAR BOOK OF RADIOLOGY FOR 1934

Diagnosis edited by Charles A. Waters, M.D., associate in roentgenology, Johns Hopkins University; Therapeutics edited by Ira I. Kaplan, M.D., clinical professor of surgery, New York University and Bellevue Medical College. The Year Book Publishers, Chicago, 1934. Price, \$4.50.

The book is composed of two sections, one on radiologic diagnosis, and one on radiotherapeutics. The contributions reviewed represent the important radiologic literature of the United States and of other countries, and the articles have a wide practical interest and importance. The book is systematically arranged, carefully indexed, and profusely illustrated, and one cannot but feel that here is a very complete reference library of radiologic literature of the year.

H. W. D.

## DIABETES MELLITUS AND OBESITY

By Garfield G. Duncan, M.D., associate in medicine. Jefferson Medical College, Philadelphia. Illustrated, 227 pages. Lea & Febiger, Philadelphia, 1935. Price, \$2.75.

Diabetes has been recognized throughout the entire history of written medical records, but its proper management has taxed the ingenuity of the best physicians. With the discovery of insulin the management of diabetes took on new form over night. A complete knowledge of this disease can be claimed

only by those who have kept intimately in touch with the recent developments in this field of therapy.

The author of this small monograph has attempted to bring to the student and the general practitioner, the pertinent practical points in the diagnosis and treatment of diabetes, and at the same time to make the volume concise and compact. Dr. Duncan has been highly successful in accomplishing these objectives, and here presents a highly readable, compact text, which will prove a practical guide to the average practitioner.

His discussion of obesity is particularly clear and timely, since the condition of obesity is so very frequently associated with that of true diabetes. Because of its simplicity, its clarity, and its thoroughness, this monograph merits full endorsement.

## MOUTH INFECTION

By Oliver T. Osborne, M.D., emeritus professor of therapeutics, Yale University School of Medicine. For sale by the author at 1155 Forest Road, New Haven, Connecticut. Price, \$2.00.

The reviewer was disappointed in this volume. The author set out to prove that infections about the teeth are the sources of many of our ills, and from the illustrations given, the reviewer cannot say that the point has been proved.

The author apologizes as follows: "Grammatical construction, fine diction, and avoidance of repetition of words are sacrificed in the book, to brevity and uniformity. Therefore, the book will be found tiresome."

The terms used are vague, such as "teeth in terrible condition", "terrible pyorrhea", "woman, thirty-eight, all kinds of disturbances", "great deal of indigestion", "thyroid small", "aortic direct murmur", "has some acne and pus spots all over", "was off and on anemic, and showed sub-thyroid activity", "sometimes faintish, sometimes there is a bad feeling in the left side."

Many illustrations are not conclusive, such as: "Man, age forty-five. Myocarditis, enlarged heart—heart rate is 132, and pulse at wrist 72. Had terrible mouth, loose teeth, dripping pus—all teeth removed. Consultation case; not seen again."

"Man, age fifty-five. Heart misbehaving. Terrible pyorrhea, old tooth roots unextracted—pus."

"Man, age fifty-eight. Boils and carbuncles. A terrible mouth condition, pyorrhea, etc."

In his discussion of Vincent's infection of the mouth, mention is made of "full strength peroxide of hydrogen," and "strong solutions of sodium perborate," while no mention is made of the arsenicals or bismuth.

With revision, and a more complete discussion of the cases reported, the volume will probably express the present idea of focal infections about the mouth in relation to general conditions. The succeeding editions will undoubtedly be improved. No doubt the enthusiasm of the author will be more rational, as he mentions curing baldness, in one illustration, by extracting infected teeth.

D. M. B.



# The JOURNAL

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## Iowa State Medical Society

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DES MOINES, IOWA, OCTOBER, 1935

No. 10

### THE PRESIDENT'S ADDRESS\*

GORDON F. HARKNESS, M.D., Davenport

To greet you here in our Eighty-fourth Annual Session, in my own home city, makes me doubly appreciative of the honor you were kind enough to confer upon me one year ago. A so-called presidential address has been a prescribed part of our annual program. There was a time when such an address probably best served its purpose by the presentation of some scientific subject. The marvelous scientific advances of this modern era of medicine offer many opportunities to continue the former custom, but with scientific advances have come equally startling social and economic changes affecting the medical profession.

To accept the honor of being the titular head of our profession once meant simply to carry aloft the banner of its science. Today one who accepts this honor, if he is to fulfill the obligations of the office, must realize that it is not an honor which can be received without the recipient being willing to dedicate his time, his efforts, and services to the best of his ability to the economic as well as the scientific advances of his profession. This does not mean that we do not still remain primarily a scientific association. Educational institutions, while still retaining their original purposes, have found that to continue their work successfully, more than just the scholar is necessary. Direction of activities became so multitudinous that the scholar must in addition be possessed of executive ability in order to direct all activities in a proper manner.

A similar analogy can be drawn to the activities of the Iowa State Medical Society. Organized medicine must carry on its scientific programs. They could possibly be carried on by other types of associations, but the economic and sociologic problems that face the world today, as they affect disease, care of the ill, and the medical profession, can only be directed through organized medicine. The only broad democratic form of medical or-

ganization which today meets the necessary requirements, is that system of organization which begins with the county unit, continues to the state organization, and finally amalgamates in the American Medical Association.

In this year of service to this society which is about to close, I have carried on to the best of my ability. If I have been able to be more than simply a figurehead, I would say that serving as a trustee and gaining thereby an insight as to various activities of our organization, was a splendid training school. The man who accepts the honor and wishes to fill the office creditably cannot help but be handicapped if he has not had some actual experience as an active worker in our organization.

If you think there have been real accomplishments during the past year, I would have you know that the personal credit extends only to the selecting of those loyal unselfish fellow-physicians who accepted appointments confirmed by the House of Delegates. To them and to those elected by the House of Delegates, to the trustees, to the council, and its committee appointees who have worked zealously throughout the past year, belongs the real credit.

I have dutifully attended the meetings of the board of trustees, the council, the meetings of the medical economics committee, and the program committee. I have accepted all invitations received from county societies when asked to speak on social and economic problems affecting our profession. As an ex-officio member of the legislative committee I have met with them in Des Moines and with the late Dr. Bendixen I covered part of the eastern section of Iowa in our preliminary educational campaign. I have appeared before other professional organizations.

As I have gone over the state, I have attempted to ascertain the attitude and condition of physicians in Iowa. I have conducted impromptu forums. It is necessary to examine the foundations of our own house if we expect to have a directing hand in the future problems of ill health. From personal contacts and answers received from men

\*Presented before the Eighty-fourth Annual Session, Iowa State Medical Society, Davenport, May 8, 9, 10, 1935.

long in the profession, I think I can state that within the profession, there is more courtesy and less jealousy, than there was three decades ago. Physicians are not more commercial, they are perhaps better business men, but the traditions of our profession are still being preserved.

I have also attempted to ascertain from the men who know, and this is, of course, discounting the present economic depression, as to whether the physician practicing in the rural community has a more difficult time to maintain himself, his family, and his position, than he did twenty-five years ago. The answer seems to be that he does not, and in many cases is more fortunate than his city brother with an increased overhead expense and competition.

Without attempting to take issue on the question, but rather to gain information, I have questioned various units as to their attitude with regard to free laboratory service. This question is before our House of Delegates at this session. I have found a wide variation of opinion. Generally speaking, in those communities being served by competent local laboratories the opinion seemed to be that the state should not enter as a subsidized competitor, giving for nothing to those able to pay. Not in all, but in some communities where access is not had to local laboratories, a sentiment was expressed for a free laboratory service. Some felt that even if it did offer an unfair competitive service to a small group within our profession, it was not the province of the entire profession to protect that smaller group, but rather the economic advantage to themselves which was paramount.

It has been a satisfaction to be in conference with a senior surgeon of the United States Public Health Service and have him make the statement that more has been done by the medical profession in Iowa, than in any other state to his knowledge, to face the problem of the medical care of indigents and to put in operation practical and workable plans. Yet here in Iowa, one of God's fairest, most fertile, and productive provinces, we find ourselves accepting aid from the national government for the relief of the unemployed employables. Indigency responsibility, which has always been a local obligation, has been transferred even beyond state boundaries. With local governmental units becoming bankrupt and without legal borrowing capacity, the individual members of the medical profession have carried on true to the traditions of their profession and their Hippocratic oath. Not one complaint to my knowledge has been made that a member of the medical profession has refused his services to those who were ill and without funds, and where governmental institutions had

not or were not giving adequate care. The problem of relief has, however, in many counties reached beyond the recipients of this relief to the very givers of the same, the medical profession.

I believe the institution of the Iowa Medical Relief Plan as an emergency measure is an admirable one. I believe we are particularly fortunate in having Dr. T. C. Denny as the medical director for the Iowa Emergency Relief Administration. No claims as to perfection are attempted, but it does offer organized medicine a chance to show its fitness to direct, and it brings back local responsibility. Cooperation is essential even though individually there may not be unanimous approval. When we are forced to accept financial aid from without from the national government, and certain rules are laid down by national bureaus, it is only through organized medicine that cooperation can be accomplished. Your Medical Economics Committee, acting for the medical profession, has given that cooperation. This committee has realized its responsibilities and its limitations. I desire to commend them for their work, and I would ask those who are inclined to take exception to certain portions of the plan, to realize that time was an element, that some uniformity was demanded, and above all that unless we agreed to cooperate we simply increased the possibilities of state medicine.

Iowa's statutory enactments have for years been inadequate in protecting its citizens from poorly qualified practitioners of some of the healing arts. For years, even though we as a profession had voluntarily improved our own educational standards, we met defeat in demanding that educational preparation was a prerequisite in any form of healing art. This year we have been successful in accomplishing the enactment of the Basic Science Law. While not the ideal law from the standpoint of the medical profession, it does insure that as time goes on, no one can practice any form of healing art without meeting certain fundamental educational requirements. This is a great accomplishment, and this society will ever stand in debt to the untiring efforts and masterly campaign as carried out by our legislative committee. Under the direction of Dr. Fred Moore, a preliminary educational campaign within our own organization was instituted. Dr. R. D. Bernard and Dr. P. A. Bendixen constituted his committee together with your secretary and president as ex-officio members. Dr. Bendixen's untimely death deprived the committee of his services which had been enthusiastically and unselfishly given up to the end of his career. Dr. Bernard is also deserving of the utmost praise and commendation. The passage of the Basic Science Law constitutes one



of the milestones in the history of the Iowa State Medical Society.

It is most fitting that at this time I express the gratitude of our organization to the professions of pharmacy, veterinary medicine, dentistry, and nursing for the invaluable aid that was given us in working for the passage of the Basic Science Law. Numerous meetings of these allied professions were held over the state. The officers of the state associations of the five professions have been in complete accord. We were all without authority to commit our individual organizations to the formation of an allied professional organization until each organization had met in annual session, but that did not deter the officers from giving us invaluable aid in furthering the cause of our legislative program. We have met as a group, and, through the courtesy of the Iowa Veterinary Medical Association and the Iowa State Pharmacy Association, I was invited to appear before their groups and given time to explain the Basic Science Law, and also the opportunity to discuss the purposes of and advocate the formation of an allied professional group. Both of these associations are now on record favoring such an organization. The Iowa State Dental Association will be asked to express their approval this week. Our own House of Delegates must also assent. The State Nursing Association will not meet for several months, and formal approval from their organization cannot be had until that time.

It must be borne in mind that such an organization is to be a mutual institution, that the form and completion of the organization will depend upon the representatives of the component societies.

Furthermore, it must be realized that we, as individual members of our own organization, cannot expect such an organization to relieve us of our own responsibilities. The greatest reason for our past failures in public health programs has been the lack of acceptance of individual responsibility on the part of our own membership. More than anything else the preliminary educational program in our own organization was responsible for the passage of the Basic Science Law. It was far from perfect but most encouraging. We must still bear individual responsibility. The future demands even greater recognition of individual responsibility. There must be no "let up." All-ying ourselves with the four other organizations, a group having the best understanding of public health needs, means a larger group working in unison, and the dissemination to the individual members of each group, that information upon which they can act.

The activities of our organization in the educa-

tional field have developed far beyond our annual meeting. Our postgraduate courses have become an established activity. They are of necessity primarily didactic. They are an example of individual and committee devotion to a cause, the improvement of the medical profession. The experiences of each year simply presage better courses in the future and courses more adapted to the needs and desires of each district. This phase of medical education has brought to our organization an example of cooperation for which we should be most grateful, and at this time I wish officially to express to the Faculty of the College of Medicine our sincere appreciation of their cooperation, and the sacrifice of time on the part of individual members. The tragedies of life come when we least expect them. I would be unmindful of my duty if I did not at this time record and express the sorrow of the members of this organization, when they learned that on November 22, 1934, Dr. Clarence William Baldrige, University faculty member, brilliant teacher, a young man with a most promising future as a medical educator, lost his life while serving this organization in the cause of postgraduate education. I trust that at this session proper recognition will be made by our organization. Mr. Chairman, may I ask that you request this assembly to stand in silent tribute for one-half minute to the memory of Dr. Baldrige.

This brings me to the association that should exist between those primarily interested in medical education and those who form that group working, as it were, in the field.

Medical education in Iowa, a state without a large center of population, occupies a rather unique position. The faculty of our state institution consists of two groups: first, those physicians serving on a full time basis; and second, those on a part time basis with the privilege of private practice. It is not within the province of these remarks to discuss the question of the desirability of a full time faculty, but rather I wish to confine myself to the fact, that as long as faculty members are not serving on this basis, they have as much right as any of us to an income from private patients. Secondly, for the information of those who are not informed, the administrative authorities of the University have limited the private and gratuitous beds to five per cent of the total.

I have attempted to ascertain if the private patients were received at the University in a way to interfere with the private medical practice in Iowa. That is, if there was any attempt on the part of some of the clinical departments to capitalize on their association with the University to increase their private practice. I have made these inquiries over the state, and I gained enough information

to state that there is no foundation for any such statements. Furthermore, I have been assured by the members of the clinical faculties that with private patients every attempt is made to contact a local physician of the patient's choice, except where the patient refuses to have such contact made.

I did find, however, that the question of cost patients was a matter of some abuse in some localities. This abuse was not the fault of the University administration, but, rather, an example of a lamentable weakness in our own ranks, where often the physician signed, as it were under duress, the necessary papers which permitted an undeserving patient to receive this service. Learning that in Wisconsin a financial statement signed by the patient was also a prerequisite, and that it effectually solved the problem, I suggested a little more than a year ago that such a plan be adopted. I brought this matter to the attention of our Medical Economics Committee, and, since I had personally started to negotiate for this change, your Medical Economics Committee directed me to continue the same. I wish to state there was evidenced a most ready desire upon the part of the administrative committee of the faculty to cooperate in this change. It took some time to have this change approved by all concerned, but I am happy to report, on behalf of the committee, that the new blanks have been distributed, and it is now necessary, in addition to the physician's certificate, for the cost patient himself to sign a financial statement showing his inability to pay for more than hospital charges. For these various acts of cooperation, we, as a medical profession, should be truly appreciative.

Medical education, if we are to have the same in Iowa, and I personally believe we should, and that it should be maintained at the highest of standards, stands in a peculiar position. Last year before this society I took occasion to compare local and state costs of indigent care. This was misinterpreted by some as a criticism of state costs. I specifically stated at that time that I was not criticizing state costs. I merely attempted to state facts, and that in Iowa we could not have medical education without the costs of furnishing clinical material being above that which efficient local service could supply. Knowing these facts, and giving approval and support, as I feel we should, to the laws through which clinical material is supplied to the University, is a constant contribution by the medical profession to the cause of medical education. Otherwise there would be some compensation to the local professional and local institutions by county governments for the care of these indigents.

I believe we as a profession should continue to make this contribution willingly, but that it should be recognized as such by those in authority. I think we as a profession should not do this grudgingly but with a real spirit of cooperation, and so organize in each county that the patients sent to the University Hospital are those best adapted for teaching purposes. This is being done in some counties, but needs better organization in most of the counties. I believe more is accomplished when the two groups can work in a reciprocal relationship; a better understanding develops of the desires and rights of the one by the other. Medical education and the practice of medicine in Iowa have so much in common, can be so mutually helpful, that it behooves us to cultivate a spirit of enthusiastic mutual cooperation. Not a Utopian dream, but looking into the future, I believe the University can some day occupy a closer position to the medical profession of Iowa. Medical education has spent most of its time in improving undergraduate instruction. The man in the field has been largely forgotten.

I can foresee, if we want it, and will work for it, enlarged facilities and appropriations whereby the University through a postgraduate college will be able to offer to the profession of Iowa, short, practical postgraduate instructional courses; real clinical bedside courses; and at a most moderate cost.

I shall be ever mindful of the honor of this office. I have tried to express my appreciation by giving my best efforts to fulfilling its duties. Wherein I have failed, I can only ask your charity. For the accomplishments of the year, I feel we can all be proud. It has been a rare privilege to have a very small part in these accomplishments, and a wonderful opportunity to be associated with those self-sacrificing physicians, our secretary, and our office personnel, who were really responsible for the year's accomplishments.

As a guild we have survived the centuries, and stand alone in that survival. With service to humanity, guided by the truths of science, we can as an organized group fearlessly face the future, provided you and I, as members of our organization, accept and fulfill our individual responsibilities.

#### THE HISTORIC BACKGROUND OF THE CANCER PROBLEM\*

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As a fitting challenge to the sad forebodings for the future welfare of western civilization, voiced by such eminent critics as H. L. Mencken, Bertrand Russell, Oswald Spengler and all the

\*Introductory lecture, Cancer Round Table, Broadlawns Hospital, Des Moines, March-April, 1934.



other gloomy deans, it is indeed inspiring that the American College of Surgeons has been able to assemble 24,448 verified five-year cures of cancer. Such an achievement is the more remarkable when it is recalled that it is scarcely more than half a century since a master German surgeon proved by a statistical review of his own cases that cancer can be cured at all.

In attempting this brief review I am again reminded that it was this same master, Billroth, who declared: "He only who knows well the past and present of an art or science will be able to intelligently direct its future progress". When Spengler declares that, "Science is but a fleeting specter reflecting the ebbing life course of a nation as witness the declining centuries of Classical, Indian, Chinese and Arabian thought," and that "the creative masters in physics, chemistry, mathematics and biology are already dead," he evinces a miserable lack of understanding of the last century crescendo in the advancement of the science and art of healing.

When we recall that almost the entire biologic foundation of medicine, including embryology, histology, physiology and pathology, reflecting as they do the advancement of the basic sciences which he thinks already decadent, and upon which rests the foundation for the advancement of experimental medicine and surgery, has been laid down during the last century, we may take heart for a renewed assault upon the baffling problem of malignancy. Already the advance guard possesses sufficient knowledge, if it were well and timely applied, to reduce our cancer deaths twenty-five to fifty thousand a year. Surely when Hippocrates declared more than 2,000 years ago: "*Canceros occultos omnes melius est non curare,*" he could not have meant to proclaim a nihilistic dogma of "hands off" which should echo down the ages until the last quarter of the nineteenth century.

Celsus and Leonidus of Alexandria, it is true, attempted cures and introduced the ligature and cautery, but the blight of the stupendous influence of Galen who thought all tumors due to black bile, obstructed further progress throughout the Dark and Middle Ages. The Arabians, Italians and early French writers made descriptive contributions but until Paracelsus burned the Galenic bull no advance was made in either the understanding or management of cancer. Fallopius, who flourished about the middle of the first century of the Renaissance was the first writer to break from the classical conceptions of his day and his clinical descriptions are remarkably clear. He was even more reactionary than the medieval reactionaries before him, eschewed surgery but introduced an

arsenical caustic paste, devoting ten folio pages to its technical application. His conservative attitude toward surgery would indicate that he possessed a remarkably keen understanding of the vastness of the problem and the limited compass of surgical art in his day.

About this time, however, Hildanus, the father of German surgery, boldly excised the breast, dissected the axilla and removed the metastatic nodes. In this achievement he was almost three hundred years before his time. In 1682, fifty years after his death, his *Century of Surgical Cases* was published in Latin by Joan Ludwig Dufeur. By a remarkable coincident this date marks the birth of the founder of morbid anatomy, Giovanni Battista Morgagni, whose remarkable study of the pathologic findings in some seven hundred cases, laid the foundation upon which the super-structure of the cellular pathology, a century later was to be reared. He reports among these, three cases of breast cancer, one of carcinoma of the pylorus with liver metastasis, a feature which was not understood until a century later. Morgagni was the first to correlate morbid anatomy with the cause of death, another page in the lustrous folio which records the many glorious achievements of the Italians. His work was published in 1761.

Just three years before, Ledran in France had presented his fifty-six page memoirs to the Royal Academy of Surgeons dealing with the nature and treatment of cancer. In this for the first time the humoral conception of disease was challenged, eventually to be overthrown a century later by the master mind of Virchow, Ledran advocated surgical excision alone, but remarked that where the lymph nodes were involved the hope of cure was remote. Not long thereafter the English surgeon, Percival Pott, first noted the influence of carcinogenic agents in the scrotal cancer of chimney sweeps. It was through the influences of John Howard, a pupil of Percival Pott, that the governors of Middlesex Hospital in London were prevailed upon to open a cancer ward of twelve beds; where as the record shows "these cancer paupers might remain until relieved by art or released by death." By fostering care and liberal patronage this institution grew apace and under the tutelage of such distinguished surgeons as Charles H. Moore and Sir Bland Sutton, it remains today one of the most famous clinics of its kind.

The great John Hunter by his mastery of gross pathology and his enormous surgical practice was able to leave behind him a remarkable array of manuscripts among which was at least one on cancer. This was plagiarized after his death by his brother-in-law, Sir Everard Home, and published

over his own name, but the keen observations and terse descriptions reveal too well the influence of the great English master. His nephew, Matthew Baillie, wrote the first English textbook on pathology, using the material of the Hunterian Museum. Among his engravings are notable examples of cancer of the gullet, stomach and bladder.

At the early age of thirty-one years, there died in Paris, in 1802 the most prodigious medical genius of the eighteenth century. Had his life been spared to full fruition it is entirely possible that our understanding of cancer would have been advanced by half a century. Marie François Bichat, whose brief but fruitful days were spent among the shifting scenes of the French revolution, laid down by arduous labor the foundation of histology by a systematic study of the cellular elements of the tissues in the gross, and although he did not use the microscope, clearly distinguished between the stroma and the parenchymatous elements and at once discarded the superficial distinction between occult and ulcerating cancer which had stifled progress since the time of Hippocrates. He, like most students down to and including Virchow, believed that all tumors originated in connective tissue. Had his life been spared until the perfection of the acromatic microscope in 1824, his genius would perhaps have recognized this fundamental error.

The brilliant Laennec, who like Bichat died before his time, clearly distinguished the difference between phthisis and pulmonary cancer, and classified malignancies into the scirrhus, encephaloid and melanotic types. His countryman, Récamier, first clearly described the nature of cancer infiltration, invasion of veins, and applied the term metastasis to a nodule in the brain which he discovered secondary to cancer of the breast. Before the downfall of Napoleon, the German philosopher, von Fichte declared, that their armies were defeated, their country overrun and their spirit broken; that the hope of the nation lay in the development of an intellectual and spiritual leadership which should eventually dominate the world. The fruits of this leadership remained unchallenged in the field of medicine through the remainder of that century.

In 1824, von Siebold, professor of obstetrics at the University of Berlin, made a notable descriptive contribution to cancer of the uterus, scarcely yet equalled and probably not excelled. With nihilistic candor he regarded the disease as hopeless, due to a scrofulous constitution, and fantastically invoked venery and the reading of questionable romance as contributory factors. He contented himself with the advice of a cleansing douche.

Near the middle of the last century, Sir Ashley Cooper published his beautifully illustrated book on diseases of the breast, a subject in which he continued his interest throughout his life. He intended to devote a second volume to breast malignancies but found the contemporary anatomy in such chaotic confusion that he turned his remarkable genius to a detailed study of the architecture of the organ. He worked out the lymphatic distribution by the laborious method of mercury injections and gave the first clear distinction of fibro-adenoma and cystic disease of the breast. He also described fungoid and scirrhus cancer of the testicle and mapped out the paths of their metastases. The influence of his teachings was reflected in Boston by his pupil, John C. Warren, who early brought to Harvard a deep interest in the study of tumors.

Sir Everard Home, who first illustrated microscopic sections of cancer, died in 1832, a few years after the perfection of the microscope. He called these cancer cells, lymph globules, illustrating again the prevailing error of the connective tissue origin of cancer.

The real beginning of the microscopic study of tumors was made by Johannes Müller who wielded a tremendous influence in the faculty of Berlin throughout the second quarter of the last century. He recognized the essential identity of the cellular elements in benign and malignant tumors and by his own labors and that of his pupils initiated the Golden Age of German Medicine which continues preëminent to this day. His work on the finer structure and forms in tumor growths, generously supplemented by microscopic illustrations, appeared in 1838. He died at fifty-seven years of age in 1858, the year Virchow delivered his famous twenty lectures on the cellular pathology in the New Pathological Institute, whence he had been recalled from Württemberg after his ten years' academic exile from Berlin as a result of his political activities in the revolution of 1848.

Realizing the immense possibilities of exact microscopic studies, Virchow, after his graduation in 1843, immediately directed his energies to the study of pathology in which he was an acclaimed leader for more than half a century. His zealous championship of the thesis that all tissue and likewise tumors are but the modified descendants of previously existing cells, drew to him the outstanding medical scholars of the world. The keen pragmatism of his polemics, the encyclopedic scope of his erudition, no less than the realism of his objective demonstration, as well as his enduring defense of liberal democracy, reveals to us a man of the most boundless energy and intellectual honesty. Even as I knew him in his eightieth



year, he was still at his best championing a cause or defending a thesis. It is remarkable that while tumors were perhaps the object of his greatest interest, herein lies one of the greatest errors in his whole career. His studies of inflammation, sepsis, thrombosis and the whole gamut of connective tissue reactions must have so obsessed him that he could not conceive of cancer growths by epithelial proliferation. He did not grasp the full meaning of metastases and although he observed cancer cells in the blood stream he conceived them to have originated from connective tissue cells *in situ* as a result of excitants conveyed through the blood stream from the original tumor, which he likewise considered connective tissue. As early as 1854, Remak refuted this theory but Virchow remained unconvinced until his own countrymen, Thiersch and Waldeyer, showed by stained sections that deep seated cancer of the skin springs from the surface epithelium and that secondary foci in remote lymph glands is of an identical origin.

Thus at the close of the third quarter of the last century after more than two millenniums of painful search and experimentation, the cellular origin, the nature, and routes of disseminations were finally understood and recognized. We may say that with the appearance of the monumental work on tumors by Max Borst at the beginning of the present century the descriptive phase of cancer had been completed. The charming book of Bland Sutton with its intriguing romantic style and clear terse English, and the comprehensive hand book of neoplastic diseases by our own countryman, Ewing, has brought this phase of the subject within the grasp of all English readers.

In the surgical approach to the problem, this craftsman's guild owes a debt of eternal gratitude to the fearless, pioneer spirit of its greatest modern master—Christian Albert Theodor Billroth. About him clusters a brilliant galaxy of later teachers charmed by his genius and inspired by his virile optimism.

Samuel W. Gross of Philadelphia took up the challenge and in his book on tumors of the breast which appeared in 1880 insisted upon the complete removal of the breast with a dissection of the axillary glands in every case. This was further extended by Halstead of Johns Hopkins University by a wider skin excision, removal of the pectoralis major and section of the minor with complete dissection of the lymph bearing fascia from the sternum and rectus sheath to the latissimus dorsi, the axillary vessels and the brachial plexus, with insistence upon meticulous hemostasis, sharp dissections and due respect for traumatization of tissues. His results were so superior that his

method soon became universally accepted. Certain modifications, notably the preliminary dissection of the axilla, as practiced by Willy Meyer of New York and Frazier of Edinburgh, have possibly restricted somewhat the danger of dissemination by operative manipulation.

The theory of permeation by a marginal zone with degenerative recession of the central area as advanced by Simpson Handley at the International Congress of Surgeons at Brussels in 1909, and sustained by numerous and extensive microscopic studies, only serves to confirm that which had been laid down by Gross and Halstead.

Influenced, no doubt, by the bold venture of Billroth at gastric resection for cancer, the Norwegian surgeon, Bloch, in 1892, published his results on extra-abdominal, or exteriorized resection for cancer of the intestines. Mikulicz of Breslau, the most brilliant pupil of Billroth, at once adopted the principle which he further elaborated, by excision of a fan-shaped segment of the regional mesentery, and was able to report in 1902 seven cases with two deaths, a mortality of 12.5 per cent, whereas under the old one stage intra-abdominal resections almost half the patients promptly died of peritonitis or obstruction. The relatively late metastasis from the colon makes the Mikulicz method, when well done in properly selected cases, one of the most hopeful undertakings in the entire realm of cancer surgery.

In 1878, Wilhelm Alexander Freund of Breslau established on a sound basis the anatomic rationale of abdominal hysterectomy. By a strange coincidence his first case was an adeno-carcinoma of the uterus and his patient was alive and well twenty-five years later. This operation still remains the method of choice in cancer of the corpus. The principle was further elaborated by a block dissection of the entire lymph bearing fascia of the pelvis by Wertheim of Vienna, who applied it to cancer of the cervix in which he was eventually able to secure an operative mortality of about ten per cent. Few operators have been able to duplicate his results and with the perfection of radiation, most conservative operators have abandoned the method except for early or doubtful cases. It is still championed by Bonnie of Manchester in England.

Viewed in retrospect this poor and painful 2,400 year struggle of an organized profession against this baffling universal scourge, with an annual mortality among civilized peoples of approximately 100 per 100,000 population, may seem a sorry triumph in the conquest of an invisible foe; but after all, 2,000 years are but a moment in the eons of the tedious march of an advancing civilization in which step by step man's sufferings have been

assauged and his spirit heartened. Born with an unconquerable spirit of curiosity and bare hands he has proved himself not only able to fashion his mechanical tools, but likewise to create those almost godlike mystic mental formulae and symbols by which he is able to project himself into the twilight zones of the infinite limits of the immeasurable vastness and smallness of his physical universe. The cause of cancer we may never know but its nature, whether large or small, no one can doubt is deadly.

## Symposium on Carcinoma of the Colon

### DIAGNOSIS AND SYMPTOMATOLOGY\*

ERNEST E. SHAW, M.D., Indianola

Carcinoma of the large bowel is one of the most important of the malignancies of the gastro-intestinal tract. In a group of 3535 cases of gastro-intestinal malignancy, collected by Mallory, 1689 were of the stomach and duodenum, 24 of the rest of the small bowel, and 1822, or 51.54 per cent were of the large bowel. Other statistics show about the same proportion. A review of the vital statistics from the report of the Bureau of Census showed the mortality rate of carcinoma from 1930 to 1933 inclusive to be constant. The deaths are divided into those from malignant tumors of the stomach and duodenum, and of the large bowel. These show the death rate per 100,000 population to be twenty-one for carcinoma of the stomach and duodenum, and fifteen for carcinoma of the large bowel. Iowa for the year 1930 showed a mortality rate of approximately thirty-six for carcinoma of the stomach and duodenum, and twenty-one for carcinoma of the large bowel. The mortality rate of carcinoma of the large bowel exceeds in malignancy that of any other organ except the stomach. Carcinoma of the large bowel accounted for 14.87 per cent of all deaths from carcinoma in Iowa in 1930.

With this brief statement of the importance of the problem we will consider the diagnosis of the disease. It is a malignancy which develops quietly; according to Carter there is "perhaps no other place where malignancy is of such insidious onset." As a result of this fact, the experience of surgeons as reported in the literature is that from fifty to sixty per cent of the cases are inoperable when they are diagnosed. Yet they also state that the outlook of carcinoma of the colon, satisfactorily removed, is easily comparable with carcinoma of the breast and lip. There is a unanimity

of opinion expressed in the recent papers on this subject to the effect that early diagnosis is essential to cure; the condition is apparently present in most instances for one year before it is diagnosed; fifty to sixty per cent are inoperable when diagnosed; with present methods a ninety per cent diagnosis is possible; and carcinoma of the colon is as curable as carcinoma of the breast if it is diagnosed early.

*Etiology.* The sex ratio shows about three males to two females. The age incidence is apparently a little lower than most malignancies. Cattell, in reporting a series of 350 cases, states that sixteen per cent were between the ages of twenty and thirty-nine years. There is a tendency for the lesions to occur more often at the points of greatest irritation. The greatest percentage occur in the rectosigmoid where hardened feces produce irritation; other points are the cecum opposite the ileocecal valve, and near the hepatic and splenic flexures. The one factor which is most important is the presence of polypi, which are very frequently found to be the seat of malignant changes.

Pathologically there are three major types of carcinoma found in the colon.

1. The adenocarcinoma, a circumscribed elevation of the mucosa which tends to ulcerate, spreads peripherally, and is most often found in the right half of the colon.

2. The scirrhus, or fibrocarcinoma, a superficial ulceration which tends to fibrosis. This type encircles the lumen, causes strictures and obstruction and is most often in the left half of the colon.

3. The mucoid carcinoma, which spreads largely, and forms a bulky mass. This is the most rare, and at the same time the most malignant of the three types.

Generally, if the patient comes to the physician early, with a carcinoma of the colon, the diagnosis depends on the physician's consideration of the possibility of this diagnosis. If the physician keeps the possibility ever in mind, carefully studies every case of abdominal distress in a patient of "cancer age," and uses all the diagnostic procedures indicated, many of these early cases will be recognized and treated surgically while they are still definitely operable.

Due to the fact that the colon, embryologically, and functionally, can be divided into two parts, the symptoms of the disease are best discussed by a similar division. The right half of the colon is formed from the midgut, is supplied by branches of the superior mesenteric artery, and is an active absorbing section of the bowel whose contents are largely liquid. The left half of the large bowel is formed from the hind gut, is supplied by

\* Presented before the Eighty-fourth Annual Session, Iowa State Medical Society, Davenport, May 8, 9, 10, 1935.



branches of the inferior mesenteric artery, and functionally is largely a storage reservoir for waste products in a semisolid or solid form. The type of lesions also varies, causing further variation in the symptoms; the lesions of the right half being large, flat, ulcerating growths on the lateral wall; the lesions of the left half being smaller, more fibrous, and tending to encircle the gut causing stenosis.

The symptoms and signs of carcinoma of the right half of the large bowel are not diagnostic, but suggestive. They are as follows:

1. Pain, usually a dull inconstant pain, which is fairly well localized to the right side. The tenderness associated with this pain is usually not marked, unless there is a fairly large amount of pericolic inflammatory reaction: Hendrick states that fifteen per cent of the patients with carcinoma of the right half of the colon had been operated upon less than two years previously, usually for chronic appendicitis.

2. Indigestion, of a vague and indefinite type. There may be a complaint of bloating and gas, usually relieved following a bowel movement, but with no relation to ingestion of food.

3. Anemia and weakness. The anemia of carcinoma of the right half of the colon is marked, with a red count often near three million, a decreased hemoglobin, and a picture suggestive of pernicious anemia. Such anemia, with or without abdominal symptoms, should lead to a careful examination of the gastro-intestinal tract for possible malignancy. This anemia is evidently not caused by loss of blood, as there is little tendency to hemorrhage until later, but is probably due to the absorption of toxic products from the involved bowel.

4. Change of bowel habit of the patient, whether constipation, diarrhea or alternation of the two, is one of the most constant symptoms.

5. Occult blood in the stool is a fairly constant finding, but melena is usually a late symptom in lesions of the right colon.

6. A tumor mass in the right abdomen, usually movable and somewhat tender is often found, frequently by the patient, and is the presenting symptom.

7. Loss of weight and cachexia are late manifestations, and usually mean a far advanced case.

8. X-ray findings. To be discussed by Dr. Gillies.

The signs and symptoms of carcinoma of the transverse colon vary with the location. Those in the right half are more like carcinoma of the right half of the colon, while those in the left half become more similar to carcinoma of the left half

of the colon as the location of the tumor approaches the splenic flexure.

Signs and symptoms of carcinoma of the left half of the colon are as follows:

1. The most common presenting symptom is obstruction, either complete, or partial. The chronic type with colicky pains, bloating, relief by bowel movement; the acute type with complete obstruction causing severe pain, tympanites, vomiting, and progressing rapidly to collapse.

2. The change in the bowel habit is here again the most constant symptom, being usually a progressive constipation. The lesions in the lower sigmoid and rectum frequently cause diarrheas and tenesmus.

3. Blood and mucus occur in the stools of practically all of these patients. Occasionally it is only occult blood, but usually there is melena or bright red blood. The finding of hemorrhoids or fissures, even though there is a definite bleeding, does not completely explain the presence of blood in the stools unless an examination of the large bowel is completed and the presence of carcinoma ruled out. Many patients have had hemorrhoids eradicated, only to find after some months that there also existed a malignancy which had progressed to an inoperable stage.

4. Rumbling, visible peristalsis, the feeling of and hearing of gas and liquid feces as they pass through the constricted portion of the colon is frequently noted, and the patient may even be able to localize the lesion by these symptoms.

5. A tumor mass is not often found in lesions of the left colon due partially to the smaller size of most of these tumors, and also to the fact that the sigmoid is deeply situated and not easily palpated.

6. Rectal examination will reveal many of these tumors. According to Jones eighty per cent of the malignancies of the large bowel are within reach of the examining finger or the sigmoidoscope. Although this figure is probably too high, it emphasizes the necessity of digital examination and proctoscopic examination of these patients. The gloved finger will often reach these lesions. If the patient is placed in the squatting position while being examined, and asked to strain, many lesions too high to be reached ordinarily will be forced down within reach. The examination with the proctoscope or sigmoidoscope is even more often omitted. It is easily carried out, and the diagnosis of many cases is made easy. According to Rankin, "the presence of a single growth, whether proliferating or excavating, should be looked on with suspicion. The fact of single growth is almost pathognomonic."

7. X-ray findings. To be discussed by Dr. Gillies.

In the differential diagnosis there are many things to be considered. The most common conditions which cause confusion are:

1. Chronic ulcerative colitis. Fever and leukocytosis are usually present. Sigmoidoscopic examination will usually show an inflamed mucosa with multiple ulcers.

2. Tuberculous colitis. Here there is history of infection or the finding of tuberculosis elsewhere. These cases usually have a long history, with a great deal of pain, and with intermittent diarrhea.

3. Diverticulitis. There are attacks with more acute onset, and more severe pain. Differentiation is more accurately made by x-ray examinations than by other methods.

4. Appendiceal abscess. As has been stated, operations made after a diagnosis of appendiceal abscess, or chronic appendicitis have frequently revealed carcinoma of the cecum. The appendiceal condition usually has a more acute onset, pain and tenderness are more definitely localized, and the leukocyte count is higher.

5. Functional diseases of the colon are difficult to rule out in some cases. These are probably best treated for a short time as functional cases, after which a careful re-examination should be made for persistence of the defects.

#### SUMMARY

The large bowel is the seat of about fifty per cent of the malignancies of the gastro-intestinal tract, and fifty to sixty per cent of these are not diagnosed until they have become inoperable.

The diagnosis of carcinoma of the colon depends to a large extent on the alertness of the physician, and his consideration of this condition as a possibility in any case of abdominal distress in a patient of the "cancer age."

Vague indigestion, abdominal pain, anemia, blood in the stools, changes in the bowel habits of the patient, and acute obstructions are the most common symptoms.

Since a large proportion of these lesions are in the lower sigmoid and rectum, the rectal examination by the gloved finger and the sigmoidoscope is a very important diagnostic aid.

An alert medical profession, using the indicated diagnostic procedures, can definitely increase the percentage of these cases which are discovered while still operable, and decrease the mortality rate of one of the most frequent malignancies of the body.

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## THE X-RAY DIAGNOSIS OF CARCINOMA OF THE COLON\*

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Since an object is only visible by x-ray when it differs in density from the surrounding medium, it is obvious that the colon and the tumors involving it ordinarily cannot be distinguished radiographically from the adjacent soft tissues of the abdomen. Fortunately in the x-ray examination of the colon we are able to study the contour of its lumen by introducing into it contrasting substances, either of greater density such as suspensions of barium or of lesser density such as air. Preparatory to making such an examination of the colon it is advisable to give the patient cleansing enemas to remove gas and fecal material which, if present, may produce confusing shadows. By means of a barium enema given under fluoroscopic control, the lumen of the colon can usually be well outlined.

Organic lesions which may occur at any location reveal themselves by producing an alteration in the normal contour of the barium-filled lumen. This may be an annular constriction, a rigid area of infiltration, or a growth projecting into the lumen. These abnormal areas are usually spoken of as "filling defects" and are readily apparent when viewed in profile. Unfortunately when the patient is examined in the usual position of dorsal decubitus many of these lesions are not so located, but may occupy such a position as to be obscured by the opaque barium column lying either in front of or behind them. For this reason it is necessary to examine the patient in oblique positions to ob-

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tain tangential views of as much of the bowel as possible.

Palpation with the protected hand under the fluoroscope is essential. This is to determine mobility, to separate overlying loops of bowel and to explore any filling defect that can be seen. Those due to spasm, gas or fecal material are readily ironed out or shifted, whereas those due to organic lesions are rigid and constant. In addition to routine films of the entire colon it is my practice to take small films on the fluoroscope of any suspicious area observed. These films taken with a small aperture have a maximum of detail with a minimum of distortion and show the section of the bowel in question exactly as it was observed fluoroscopically.

Following evacuation of a barium enema enough barium remains adherent to the mucous membrane to outline its folds. These normally have a characteristic uniform pattern best studied by a radiographic film. Organic lesions involving the mucous membrane obliterate or displace the normal mucosal folds so that the normal pattern is replaced by that of the invading lesion. This method of study is a valuable aid in the diagnosis of carcinoma of the colon and one too often neglected. Its advantage lies in the fact that with a minimum amount of barium present any deforming lesion is not likely to be obscured by overlying opaque material. If air is injected into the colon following evacuation of barium enema, the barium adhering to the mucous membrane is contrasted against the less dense air in the lumen. Here again the film is to be preferred over the fluoroscopic examination. This method is of the greatest value in the study of pedunculated or polypoid tumors of the colon. These tumors, when coated with a thin film of barium, stand out in striking relief within the air-filled bowel. Small tumors of this type often can only be demonstrated satisfactorily by this method.

Of the organic lesions producing filling defects in the colon, carcinoma is by far the most common. The smooth "napkin ring" constriction of the annular lesion, the irregular filling defect of the infiltrative growth or the mottled appearance of the polypoid tumor is usually characteristic of a carcinoma. Other conditions such as benign tumors, tuberculosis, actinomycosis and diverticuli can produce similar defects and deformities indistinguishable at times from carcinoma. It is therefore necessary to correlate the x-ray findings with all available laboratory and clinical data before arriving at a diagnosis of carcinoma of the colon.

## SURGICAL TREATMENT OF CARCINOMA OF THE COLON\*

N. BOYD ANDERSON, M.D., Des Moines

It is useless to impart the fact that this symposium is dealing with the second of the great plagues to which mankind is err. Its diagnosis has been amply presented here, as it has on many previous occasions, yet, due to procrastination, failure of complete examination, interpretation of findings, and the proper advice to patients, our mortality statistics are slowly rising. Before entering upon the discussion at hand, let me sow a few seeds of thought at our own doorstep in the hopes that they may blossom into a neglected consciousness that has been only partially fruitful in the past.

An analysis of the mortality statistics of the Iowa State Department of Health for 1931 shows that cancer as the cause of death was exceeded only by heart disease and cerebral hemorrhage. Cancer killed 600 more people in Iowa in 1931 than did tuberculosis, influenza, diabetes, whooping cough, diphtheria, typhoid fever, poliomyelitis, measles and smallpox combined. Every ninth death in Iowa in 1930 was from cancer. Measured in relation to passing of time during 1930, there was a death from cancer every three hours. We, as guardians of health, are challenged each day as to our recognition of cancer and advice to those afflicted.

Daily in the perusal of literature, both of the lay press and scientific journals, we read of those seeking a cure for cancer, much in the same light as there is cure for diphtheria or tuberculosis. There is an efficient cure for cancer, but the golden opportunity for its application has been lost in most instances, because it has come too late. We should devote our energy to the early diagnosis and advice to patients rather than seeking new methods of surgical procedure. The former will be more gratifying.

The insidiousness of bowel cancer usually precludes the initiation of early therapy. If early malignancy had the benefit of half as much pain as the ordinary boil, our mortality rate could be materially reduced. Cancer of the colon and rectum is far from a hopeless lesion. Malignant areas in these locations possess certain features which should encourage us to continue trying to cure an ever increasing percentage of these people. May we hurriedly review the chief characteristics of carcinomas of the colon; first, they are of the colunar cell type; second, they are of low grade

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malignancy; third, they spread very slowly; and fourth, they rarely give rise to metastasis except in the abdominal cavity. This means that for a number of years carcinoma of the colon remains a local lesion suitable for complete removal with little or no danger of metastasis.

To review the types of carcinoma of the colon, we find the most common to be the scirrhous, frequently referred to as annular carcinoma, affecting the left side of the colon and producing in due time a progressive stenosis with dilatation above. Between sixty and seventy-five per cent of all clinical carcinomas of the colon are of this type. The right half of the colon gives rise to the fungoid type, with its large cauliflower mass protruding into the bowel and often a marked accumulation of fat on the outer surface. These tumors may often be felt through the abdominal wall. They cause very little obstruction and are the least malignant. A third and rather rare type affects the sigmoid and upper rectum. It is the deep ulcerated type which spreads earlier and debilitates the patient sooner.

The only reliable therapy for carcinoma of the colon is a careful and thorough excision. Malignancy here is more readily curable than in the stomach. The lymphatic supply is not so rich or active; likewise the circulation is poorer than in the stomach, hence spread is bound to occur at later date. Irradiation of the colon malignancies has little to offer in the way of cure. Some radiologists do claim results from radium needles implanted in the rectum and lower sigmoid. In advanced cases, radium or the high voltage x-ray may retard the progress of the disease and add some degree of comfort to the individual. On the whole, the most of the colon cancers are radio-resistant. It is not to the advantage of the patient to temporize with irradiation, when the area involved is usually open to an extensive surgical excision.

Surgical treatment of carcinomas of the colon should be based upon the physiologic principles involved; the surgery adjusted to the patient rather than the patient fitted to the surgery. Cancer of the right colon is characterized by physiologic changes which point to organic lesions, while the opposite side is concerned with obstructive phenomena. Having in view these facts the symptoms are soon divided, and likewise our therapeutic approach. On the right side we will be forced to combat a definite and progressive anemia, an intoxication resulting from an infected ulcerated area, and a certain amount of ordinary dyspeptic manifestations. The obstructive signs of the left side are usually of the chronic type, but may have engrafted upon them at times those of acute con-

ditions arising from injudicious therapy. I do not propose in this discussion to recount the details of technic, but rather to impress upon you principles of treatment which are safest for the patient and at the same time secure the maximum of efficiency.

The colon with its meager blood supply, its contents saturated with bacteria, renders surgical procedure quite different from the upper bowel where nutrition is abundant and organisms scarce. Suturing of the colon will always be dangerous unless proper preliminary measures are instituted. The danger of sepsis must be held to the lowest point, if the mortality rate is to be kept at a low level.

The graded operation should be the one of choice, for the surgical treatment of carcinoma of the colon and rectum, to accomplish any degree of cure, involves procedures of great extent, all of which tax the vital powers of the individual. There are several considerations which influence the mortality rate of surgery of the large bowel. First, the patient is usually advanced in years and poor risk, being driven to the physician because of a progressive weakness or obstruction. Second, the architecture of the colon with its thin walls, poor blood supply, longitudinal bands and appendages precludes to an accurate line of anastomosis. Third, the right side of the colon with its liquid contents saturated with virulent organisms lends itself easily to peritonitis; likewise the left sided suturing is submitted to a strain by the solid feces tending to be packed at the line of resection. Obstruction and leakage is always dangerous.

The mortality rate of surgical therapy of the colon, including the making of an early diagnosis, does not evolve about any particular method of approach or technic of resection, but rather upon the careful preparation of the patient, the timing for surgery and his management afterwards.

The preoperative factors, which must be considered if a good prognosis is to be assured, are composed of an adequate decompression of the colon and a rehabilitation of the patient. Most of these patients have tolerated a moderate obstruction for some time, with a resultant dehydration, toxemia and lowered vitality. Decompression will lessen the absorption and combat the dehydration as well as reduce the pericolic inflammatory size of the growth, and aid in general wound repair. To effect a decompression the patient should be hospitalized for several days prior to exploration. The relief of colic pressure may be attained by repeated colonic irrigations of normal saline or mild purgations. The use of saturated Epsom salt in teaspoonful amounts with a glass of water, given at frequent intervals, will often secure a thorough



cleansing of the bowel without weakening the patient. Decompression must be obtained before any resection is done. If medical measures cannot accomplish it, a surgical decompression is necessary, because resection and anastomosis is fraught with danger in the face of any obstruction. In all obstructions the bowel wall above is water logged, giving rise to leaking and impaired healing. I might here impress upon you the difficulty of obtaining an adequate decompression when barium has been given by mouth. Oral barium should never be used when one is the least suspicious of a malignant lesion of the large bowel. Often times an obstruction is produced which demands immediate exploration. Feces proximal to a growth are removed with greater ease than a large amount of packed barium. Greater diagnostic value can be obtained from a barium enema or a barium aerogram with practically no danger of obstruction.

Surgical decompression is best accomplished by an end to side ileocolostomy, cecostomy or colostomy, depending upon the site of the lesion. One should not quibble over the technic of such operations as long as a functional opening is obtained. If the lesion is in the rectosigmoid area it is better to sever the bowel completely and make a permanent colostomy, after the manner described by Lahey. The distal opening is also implanted in the abdominal wall above the pubis. With this procedure one can irrigate the distal portion containing the growth from above downward and thus secure a thorough cleansing. It is remarkable how many times a relatively fixed growth will become mobile when the fecal content is diverted, the loop washed, and the inflammatory exudate absorbed.

During the period of decompression one is attempting to rehabilitate the patient. A general diet high in carbohydrates and low in residue is essential. These people need food and plenty of it. It is foolish to expect to accomplish anything with liquid foods. The fluid intake should be pushed to the limit, though care should be taken not to water-log the tissues. Blood transfusions are highly desirable and it is not necessary to wait for a profound anemia before making use of a transfusion. It will often be the deciding factor to success, even if the hemoglobin approaches normal.

Many surgeons use a mixed vaccine of colon bacilli and streptococci three to four days prior to operation in order to augment the defensive mechanism of the peritoneum against peritonitis. Do not misunderstand me and believe that the aforementioned vaccine precludes peritonitis. It

does not. It is only one of the factors used to insure safety for the patient.

The employment of one form of operation to the exclusion of all others decidedly narrows the scope of usefulness which surgery offers. Any surgical excursion which attempts to relieve a person of cancer of the large bowel, with its adjacent gland bearing tissue, is an enormous procedure. The operative scope should be selected to fit the pathology and the individual, with due consideration as to whether you intend to perform a radical operation or merely attempt palliative measures. Surgical judgment tempered by experience in deciding what is best to secure the greatest number of years for the patient precedes technical skill.

Our first problem in actual technic begins with the choice of an anesthesia. This factor has always been a much discussed one, each type having its just adherents, and to say that one anesthetic agent is taboo, merely brings out the personal equation of the operator. Some men have brilliant results with one type, where just as capable an individual has nothing but trouble. Select the anesthetic agent to which you can best adapt yourself and at the same time secure the greatest safety to the patient. A sacral block is ideal for peritoneal work. A little gas may be added if the peritoneum happens to be opened. With very obese people or those giving evidence of pulmonary complications or liver damage a spinal infusion has its advantage. It is contraindicated in those with arteriosclerosis, marked nervousness or in advanced years. A carefully given ether inhalation with the addition of nitrous-oxide or ethylene is perhaps yet the safest when all conditions are to be met.

Regardless of the general appearing condition of the individual with carcinoma of the colon or rectum, I feel that resection should always be done in two or more stages. One has little to fear from shock at the first period and during the interval the patient has had time to build his reserves and more amply combat the second operation.

With cancer of the right colon, the initial step is an end to side ileocolostomy between the ileum and the transverse colon. A far better functional result is obtained than when the side to side method is used. At least two weeks should lapse before resection is done. The growth is explored by a rectus incision, freed from its peritoneal space, and its blood supply ligated to the hepatic flexure. A metastatic nodule in the liver or glands which cannot be removed is not necessarily a contraindication to resection. The patient will live longer and be more comfortable than

if he is a host to a large septic mass. The raw surfaces should be peritonized as much as possible, even though you are not afraid of contamination. I believe it better to use two small Penrose drains to care for the accumulation of serum from the large retroperitoneal space.

In lesions of the transverse colon and the left colon, resection is confined to three stages. First, a right sided colostomy, bringing plenty of ascending colon to the outside so that all fecal material drains here rather than continuing through its normal channel. The distal bowel can easily be flushed through the colostomy opening. The second step is the resection by a left sided incision. If decompression has been adequate, and the growth easily mobilized, the plan of Mikulicz can be followed. This plan is not so applicable where a mobilization is not complete or if the mesentery is short. Any traction with these factors present sacrifices blood supply with a resultant gangrenous condition. If the mesentery is short or mobilization not sufficient to exteriorize the growth, or if the tumor is small, resection with primary union may be done. You must be sure of a copious blood supply from the mesentery to the bowel. The third stage is the closure of the colostomy opening in from two to three weeks. Caution here is necessary in not getting too tight a closure; one should simply insert a few sutures to check the fecal current and prevent all of the colon pressure from being thrown at once upon the recent line of sutures.

The most difficult problem is resection in the rectosigmoidal area. Radical excision is the wisest course, but it always means the removal of considerable tissue which has no bearing upon the final prognosis. Of course the ideal method is to remove the entire sigmoid and rectum at one setting and establish a colostomy. Here is the place, however, where the ideal should be forgotten and the steps suited to the patient. A permanent colostomy, with the distal end either implanted above the pubis or closed blindly and dropped into the pelvis is advisable. The blood supply is ligated down to the superior hemorrhoidal vessel. With this vessel remaining the distal portion is assured of its nutrition during the period of rehabilitation. If the superior hemorrhoidal vessel is cut, the inferior circulation is not sufficient to stave off partial gangrene. About two weeks later the distal opening of the bowel is closed, the wound reopened and the superior hemorrhoidal now ligated, the rectum separated from the peritoneum and all the gland bearing tissue pushed downward into the pelvis. A posterior incision now follows with ablation of the coccyx and the rectal segment. I believe better results can be obtained with the

method suggested by Lahey. There is no set time for the second step, the danger from infection and gangrene of the stump with resultant toxemia is practically nil. Neither is there the sloughing following the posterior section, and healing is more rapid.

With our resection completed the battle is only partially won. Can we hold the ground gained or must we lose it for want of proper aftercare? The primary factor from the moment the patient leaves the table is the prevention of peristalsis. The patient should be given adequate amounts of morphine the first forty-eight to sixty hours. No fluid is permitted during this period by mouth; however, the mouth should be kept clean and moist to aid in preventing parotitis.

Tissue fluid balance can be maintained by subcutaneous or intravenous injections with normal saline or five per cent glucose solution. All intravenous solutions should be given slowly and under supervision of the medical attendant. Blood transfusion may often turn a seemingly hopeless condition into one of success. As soon as gas is being expelled then water may be given orally in small amounts. Cardiac and pulmonary complications are cared for as in any surgical procedure.

Every patient with cancer of the large bowel demands individual procedures. No set rule can be adhered to—what is best for one type in one person is often contraindicated in another. Pathologic physiology is the same for all patients according to the type of lesion and only varies in degree. Surgical principles need only vary in their manner of application. It is to the strong adherence of the ideas coupled with early detection which will brighten the outlook for colon malignancies.

I briefly wish to illustrate three cases where I failed to follow these dictates and paid the penalty.

Case 1. Ligation of the superior hemorrhoidal at first step. Mrs. M., fifty-two years of age, with cancer of the rectum. Her general condition was fair; a left colostomy was performed, and the distal end was closed. The peritoneum was separated from the rectum. All vessels including the superior hemorrhoidal were ligated. All tissue was removed from the sacral area and pushed downward. Rehabilitation followed, but a foul discharge soon appeared about the quarantine drains. Two weeks after the operation the rectal segment was removed posteriorly. It had become markedly gangrenous as had surrounding tissue. The patient died three weeks later of toxemia.

Case 2. Disregard for the two step procedure. Mrs. S., fifty-six years of age with carcinoma of the cecum. Her general condition was excellent. Here the growth was small and the symptoms



only slight. The bowel wall was somewhat edematous. Partly to save expense to the patient and partly because I thought it possible, a primary resection and union was made. Several days later a *B. coli* abscess developed followed by a fistula. The condition of the bowel wall had precluded good union. The hospital stay was increased over what it would have been if a short circuit operation had been carried out first.

Case 3. Presents two or three points of error. Mrs. P., fifty-eight years of age with a definite cancer of the cecum and ascending colon. A mass could be easily palpated. Symptoms had been present for eight months. Intermittent constipation with associated diarrhea had been present; but no great obstruction. Medical decompression was attempted at home instead of at the hospital. For this reason, rehabilitation was not properly accomplished. As a result decompression was not complete and the patient was not in the best possible shape for surgery. She withstood the resection without much trouble, but the aftercare was quite stormy, with distention, nausea, and considerable distress. I feel that if the patient had been hospitalized and more attention been paid to building up factors, her course would not have been so stormy. Death occurred in three years from recurrence. Obviously it does not pay to let these people choose to remain at home.

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#### Discussion

**Dr. Harold E. Graber, Fairfield:** We all realize that the proper therapy of carcinoma of the colon, as well as carcinomas or malignancies of other portions of the body, depends entirely upon the early diagnosis; but, as Dr. Shaw has brought out, the insidious onset of the symptoms of carcinoma of the colon oftentimes prevents as early a diagnosis as is possible in the carcinomas of other organs of the body.

In carcinoma of the cecum, the symptoms are frequently those of chronic appendicitis, and by the time the patient is willing to undergo a surgical procedure, it is found that the colon is perhaps obstructed, at least partially, by the growth, and that the colon below that point is almost entirely empty because of that obstruction.

In carcinoma of the transverse colon, we know that the symptoms are many times latent and that the growth may persist for months or even years without ulceration and without causing the individual any particular trouble. By the time the patient comes to the physician we find that the mass is

readily recognized by palpation and that it is too late to operate.

In regard to carcinoma of the sigmoid, while digital examination may reveal the tumor mass, I have never considered it particularly valuable, except in the case of invagination. I do not mean, however, that we should neglect the digital examination; it is a good adjunct to diagnosis, but not nearly so important as a sigmoidoscopic or radiographic examination.

In the diagnosis of carcinoma of the colon, symptoms which persist and progress in spite of therapeutic measures must always lead us to suspect malignancy, and with the presence of a tumor mass, blood, pus, and mucus in the stool, we must always suspect that there is a degenerating growth, probably of a malignant character.

Differential diagnosis: Tuberculosis, as has been brought out, can usually be diagnosed by the finding of the organism; syphilis by blood Wassermann tests; actinomycosis by the presence of sinus formation and by finding the fungi; in diverticulitis, the radiographic examination and the high leukocyte count, and, in polypi, even in the presence of anemia, there is usually a lack of cachexia. Of course, in the benign growths we usually do not find either anemia or cachexia.

**Dr. Harold H. Webb, Ottumwa:** I think that most people are of the opinion that the x-ray diagnosis of cancer of the colon is a relatively easy and simple procedure. On the contrary, it is really a difficult procedure and should be undertaken only by an expert. As stated by the essayist, the ordinary method of a single film is practically worthless, because of the superimposition of the folds of the colon in the hepatic and splenic flexures. Films must be taken not only in the anteroposterior position; but also in the oblique position. Also, films should be taken after the barium enema has been expelled in order to get the normal mucosal pattern.

There are two areas in the colon which cause a great deal of confusion. There is often present a contracted ring around the cecum, especially in nervous individuals. This ring persists, and on an ordinary film will look very much like a carcinoma of the colon. That ring cannot be worked out by manipulation, and the only differentiation between a simple spasm and a malignancy is the fact that a normal pattern of the mucosa is present. The other section of the bowel which gives the greatest trouble is near the sigmoid. There is a narrow band of peritoneum at this point, which fastens the colon and causes a looping. At this point the colon is narrow and is fixed in position. Here again, the diagnosis rests on a normal mucosal pattern and on the uninterrupted passage of peristaltic waves.

**Dr. Frank W. Fordyce, Des Moines:** I think Dr. Anderson has covered the surgical side of the treatment of carcinoma of the colon very thoroughly. There are only a few things which we should always be very careful about that have not been mentioned. The first one, of course, is the difficulty in making

an accurate diagnosis and, with that, an accurate prognosis, to the patient. If the case is one in which you have enough time to make a definite decision, you can be fairly positive of what you tell him; but if you see the patient when he has an acute obstruction, you are faced with a different problem. The case may be complicated by tuberculosis, a polyposis of the colon, with ulceration, or a diverticulitis with perforation, which will cause you to make a grave diagnosis. In spite of this the patient may disappoint you and recover; however, if this happens, the patient and his family will forgive you for that.

The next question is that of colostomy. Before any patient is operated upon for a carcinoma of the colon, I believe the patient and the relatives should know what you are going to do. No place do we meet with any more dissatisfaction than where we tell a patient he has to wear a colostomy bag or some apparatus of that type without definitely explaining what they are facing. If a patient elects not to have it, that is his own business. I think he has that right. We should try, by the measures which Dr. Anderson has outlined, to secure, if possible, radical excision of this tumor. The patient should be well warned of the risk he is taking, but he should be made to understand that nothing short of a radical removal is going to be of any particular value to him.

I am glad Dr. Anderson mentioned that the single stage operation is occasionally sufficient in operating on the right side, but that ordinarily in these surgical procedures, one must use the multiple stage operation.

## ROCKY MOUNTAIN SPOTTED FEVER

CARL F. JORDAN, M.D., Des Moines

Rocky Mountain spotted fever has developed nationwide interest from a medical viewpoint. Formerly thought to be limited in distribution to the northern Rocky Mountain region, this disease has been reported in recent years as far east as Maryland, to the south in Texas, in midwestern states and northward into Canada. The most notable contributions to the knowledge of this disease have been made by investigators in Montana. The Ninth Biennial Report of the Montana State Board of Entomology<sup>1</sup> contains a brief and interesting account of the various research workers associated with studies in that state. This report deals with the work of Wilson and Chowning beginning in 1902, with the period of Howard Taylor Ricketts who went to Montana in 1906, with the experimental work to control ticks, and finally with the modern period.

### ETIOLOGY AND MEANS OF TRANSMISSION

Rocky Mountain spotted fever is caused by a rickettsia organism known as *Dermacentroxenus rickettsii*. The relationship of this rickettsia body to the disease was established by Wolbach in 1916.<sup>2</sup> The part played by the Rocky Mountain wood tick, *Dermacentor andersoni*, in the transmission of the virus of Rocky Mountain spotted fever was demonstrated by Ricketts<sup>3</sup> in 1906.

The life history of the wood tick, studied thoroughly by Ricketts, is described by R. A. Cooley,<sup>4</sup> entomologist, in a bulletin entitled "The Rocky Mountain Wood Tick." There are four stages in the life history of the wood tick; the egg, the larva, the nymph, and the adult tick. Six legged larvae hatch from a pile of eggs, climb grass or other vegetation, and attach themselves to small rodents such as chipmunks, squirrels and field mice. The larvae fill up with blood in about six days, drop to the ground, crawl to safety and change into the second stage tick or nymph. The nymph is larger than the larva and has eight legs. The nymphs, as a rule, remain in hiding for the rest of the warm season, pass through the winter and emerge in the spring to feed. Like the larvae, the nymphs crawl up on vegetation and wait for small mammals. Finding attachment the nymphs engorge with blood, drop to the ground, hide away and after about three weeks change into adult male or female ticks. The season is late when most of the adult ticks mature and they pass a second winter to emerge the following spring. As soon as warm weather appears, the adult ticks come out, crawl on large animals and engorge with blood. Copulation occurs on the host. The female feeds for about nine days and is much enlarged. Dropping to the ground, the female crawls to a safe place under a log, stick or stone and deposits about three hundred eggs a day until the number of eggs in a pile may reach over 6,000. The eggs incubate about thirty-five days, hatch and a new generation of larvae begin their life cycle.

Ricketts discovered that the virus of Rocky Mountain spotted fever spreads through the tick population in several ways. Infected female ticks may cause the virus to be transmitted to the eggs and thence to the next generation of larvae, nymphs and adult male and female ticks; or again, infected larvae or nymphs will inoculate the virus into small animal hosts, the latter in turn passing on the virus to other larvae or nymphs heretofore uninfected.

Experiments carried out by Ricketts have been reported and his findings verified by R. R. Parker,<sup>5</sup> special expert, of the United States Public Health Service, stationed at Hamilton, Montana. The

<sup>1</sup>Presented before the Eighty-fourth Annual Session, Iowa State Medical Society, Davenport, May 8, 9, 10, 1935.



distribution of the Rocky Mountain wood tick (*Dermacentor andersoni*) is confined largely to the Rocky Mountain region. Formerly it was believed that Rocky Mountain spotted fever was limited in occurrence to much the same region as the wood tick. The common dog tick (*Dermacentor variabilis*) has a widespread distribution east of the Rockies to the Atlantic, southward to the Gulf of Mexico and including most of California and southern central Oregon. In 1931 Rumreich, Dyer and Badger<sup>6</sup> reported cases of Rocky Mountain spotted fever type from Virginia, Maryland and other states near the Atlantic seaboard. The dog tick is regarded as the chief vector of spotted fever virus in sections apart from the Rocky Mountain region. Parker, Philip and Jellison<sup>7</sup> have succeeded recently in transmitting spotted fever virus through eight different species of ticks.

Human beings play no essential part in the natural life cycle of either the Rocky Mountain wood tick or the common dog tick. Man becomes infected accidentally when bitten by a male or female tick which harbors the potent virus. "Tick juice" from an infected tick that has been squeezed or crushed may also allow the virus to penetrate the skin or conjunctiva and lead to infection.

#### AN EARLY CASE IN WYOMING

An early case of spotted fever occurred thirty years ago in Wyoming in the spring of 1905.

A very sick man about forty years of age, occupied a small room in a log hotel in central Wyoming. The patient had a temperature of 103 degrees, a rapid pulse, headache and severe pains in the back and lower limbs. A physician, E. S. Jewell, was called from Shoshone, a town forty miles further west. In a paper dealing with Rocky Mountain spotted fever and presented before the Wyoming State Medical Society in 1934, Dr. Jewell<sup>8</sup> gives the following account of his visit to this patient:

"My first case of this disease was, strangely enough, diagnosed for me \* \* \*. On examination I found no congestion of the lungs or abdominal tenderness or throat condition. There was no eruption of any kind that could be made out with the aid of a tiny oil lamp. Frankly I thought I had a case of beginning smallpox but withheld my diagnosis. Relieving my patient as much as possible with what drugs I had at hand, I retired and almost immediately heard a conversation between two men through the thin partition of the next room. One said, 'I don't believe the young doctor knows what is the matter with John.' The other replied, 'I don't think so either, but he surely ought to know mountain fever when he sees as plain a case as this.'

"The next morning I found my patient resting a little easier but in looking him over carefully I found a faint reddish eruption on the feet, wrists and forehead, such as I had never seen before. My patient's friends were demanding a diagnosis, so with all the assurance I could summon I said, 'mountain fever.' One man said, 'I guess it's all right, but I've never seen them break out that way.' I promptly replied that in some cases there was considerable eruption."

Dr. Jewell goes on to state that he left all the medicine he had and promised to send more by stage. He then rode back home and hastened to his books. To quote further from Dr. Jewell:

"Three or four days later I saw my patient again. I found the eruption had spread over the entire body; he was still very ill and had considerable albumin in the urine. A few days later the eruption began to change to a bluish cast, temperature subsiding and the patient quite weak."

In connection with the experience of seeing his first case of Rocky Mountain spotted fever, Dr. Jewell recalled that in 1902, while a student at the University of Minnesota, Dr. L. B. Wilson, formerly professor of pathology at Minnesota and now head of the Medical Department of the Mayo Clinic, had left with his assistant Dr. Chowning to make a special study of spotted fever in the Bitter Root Valley of western Montana. Dr. Wilson, in reply to a letter from Dr. Jewell (1905), identified the Wyoming case with Rocky Mountain spotted fever. Dr. Wilson also advanced the theory that illness was acquired from the bite of an infected wood tick. This was a year before Howard Taylor Ricketts, at that time making notable contributions to the knowledge of spotted fever at Missoula, Montana, demonstrated in 1906 the part played by the wood tick in the spread of this disease.

#### ROCKY MOUNTAIN SPOTTED FEVER IN IOWA

It is not known whether or not cases of Rocky Mountain spotted fever occurred in Iowa prior to 1931. In that year, Dr. J. B. Stoll, then of Fontanelle, Adair county, Iowa, reported illness in a four year old boy, the tentative diagnosis being typhus fever. The Weil-Felix test, carried out by the National Institute of Health, was positive in a serum dilution of 1:5120. The patient had a high leukocyte count. The protection test, performed with blood serum from this patient showed no protection in guinea pigs against typhus fever, but considerable protection against Rocky Mountain spotted fever. It is Dr. Parker's opinion, expressed in a letter to the writer, in 1934, that Dr. Stoll's case was one of Rocky Mountain spotted fever.

Dr. C. N. Freligh, of Waucoma, Fayette county, Iowa, was the first physician in the state to report a case of Rocky Mountain spotted fever as such, to the State Department of Health. A farmer, forty years of age, living in Fayette county, Iowa, took sick early in June, 1933. Onset of illness was sudden, with a severe chill while working in the field. He had fever, severe headache and vomiting. He was seen at this time by Dr. Freligh. On the third day a maculopapular rash appeared, this being most profuse about the ankles, wrists and upper forehead along the hair line. The eruption spread upwards on the limbs to the body, becoming generalized after three or four days. On June 12, about a week after onset of symptoms, the patient was drowsy and complained of neck stiffness. His temperature reached 103 degrees. The pulse was moderately accelerated. Dr. Freligh, struck by the peculiar character of the eruption, recalled a description of spotted fever heard at a medical meeting in Minneapolis over thirty years ago. At that meeting, Drs. Wilson and Chowning after their return from Montana in 1903 had told of their experiences with the Bitter Root disease. Dr. Freligh telephoned to the Iowa State Department of Health on June 14, 1933, reporting what he regarded as being a case of Rocky Mountain spotted fever. The Weil-Felix agglutination test on a blood specimen taken within ten days after onset of symptoms was reported negative. The same test on a blood specimen obtained three weeks after onset, was reported by Dr. I. H. Borts, bacteriologist, State Hygienic Laboratories at Iowa City, as being positive in a serum dilution of 1:320 with partial agglutination in 1:640. This test was verified by the National Institute of Health at Washington, D. C.

Strangely enough, a second case of Rocky Mountain spotted fever occurred almost simultaneously with the first, in Louisa county, southeastern Iowa, with onset June 6, 1933. The patient, a little girl seventeen months of age, was admitted June 11 to the Children's Hospital at Iowa City, under the service of Dr. P. C. Jeans. The temperature reached 103.8 degrees. Reddish petechiae, pin-point to pin-head in size, covered the entire body. The case proved fatal within a week after admission. Diagnosis was made by Dr. G. H. Hansmann, pathologist, based on the microscopic examination of skin lesions. The Weil-Felix test also proved positive.

A third case, that of a boy six years of age, in Allamakee county, was reported by Dr. C. W. Rominger, of Waukon. Of the five cases recorded in 1933, the fourth and fifth were reported and given careful study and attention by Dr. H. E. Stroy, of Osceola in Clarke county. I might men-

tion, also, that Dr. Stroy had what he regarded as a fatal case of spotted fever about the same time that he saw the other two patients. Dr. Stroy himself suffered an acute attack of appendicitis and underwent an operation at that time, which made it impossible for him to give careful study to the case which proved fatal. In November, 1933, a visit was made by R. R. Parker, Ph.D., entomologist and special expert, United States Public Health Service, Hamilton, Montana, to the localities in Iowa in which cases were reported.

During the summer months of 1934, six cases of Rocky Mountain spotted fever were reported in Iowa. The first report was made by Dr. R. E. Gunn of Boone county. The second case was reported by Drs. F. Poepsel and B. J. Dierker of Lee county. The third and fourth cases occurred with onset August 7 and 9, and concerned two boys, six and four years of age, respectively. These children are brothers living in the same home at Lowden in Cedar county. Rocky Mountain spotted fever was suspected by Dr. Fred Montz and case reports were forwarded to the State Department of Health by Dr. M. L. Floyd, Children's Hospital, Iowa City. The fifth and sixth suspected cases were reported by Drs. G. P. Reed of Davis City, Decatur county, and Dr. M. E. Johnson of Corning, Adams county.

#### AIDS IN DIAGNOSIS

##### 1. Clinical Picture.

This would be difficult if based alone on symptoms of onset consisting of malaise, chill, fever, headache, aching pains, epistaxis, prostration and in some cases lethargy which may pass into coma. The eruption, however, is of striking character when well developed. Although resembling that of measles, the eruption of spotted fever may persist for ten days to two weeks or longer. Faint macules, irregular in outline and size, appear at the wrists, ankles and forehead. After several days, the eruption may be generalized, covering the entire body. The skin lesions have been observed by relatives as well as physicians to be pale when the fever is low, the color deepening with a rise in temperature. The macules later assume a petechial character or may be definitely purpuric. Brownish discoloration occurs before the eruption fades and disappears. Significant signs which aid in the diagnosis are those referable to the nervous system. Reflexes may be exaggerated, with definite ankle clonus.

##### 2. Laboratory Aids.

a. Leukocyte count. A moderate leukocytosis usually is associated with Rocky Mountain spotted fever, a leukopenia with typhus fever.

b. Weil-Felix test. An agglutination test on



blood serum is carried out, using an antigen made of organisms of a *Bacillus proteus* strain known as B. proteus X19. The test may not be positive until nearly two weeks after the onset of symptoms.

c. Protection test. This test is a distinct aid in diagnosis but is not used until after convalescence. The patient's serum contains immune bodies. The serum, when administered to guinea pigs protects the animals against spotted fever virus. Control animals which are inoculated with virus but receive no serum, succumb to infection. The protection test helps, in addition, to make the differential diagnosis between Rocky Mountain spotted fever and other infections due to typhus strains of virus.

### 3. Epidemiology as a Diagnostic Aid.

Careful inquiry should be made regarding possible exposure to ticks, tick-infested dogs or other animals. The Iowa cases occurring thus far have concerned persons living in rural areas or children from town who visited in the country. One urban patient had spent part of a day in a heavily wooded park some days before becoming sick. Two little boys in the same home had slept together and with the father who worked at a stone quarry and from whose body an engorged tick had been removed some days before the children became sick. The incubation period varies from three to seven days.

Rocky Mountain spotted fever is a tick-borne infection related to rural districts. Endemic typhus fever, similar clinically but due to a distinct virus, is transmitted by the rat flea and occurs in urban communities, particularly in southern and eastern states.

The view has been expressed by physicians and others that cattle shipped into the state from the west, have been a major factor in importing spotted fever virus. Dr. Parker believes that, if infected ticks were being introduced with cattle, cases of Rocky Mountain spotted fever would be reported along the railroads and other routes of travel. Such cases have not occurred in significant number. Dr. Parker, who has been studying this disease for twenty years, is of the opinion that the virus is very widespread in nature. He believes also that the rabbit tick (*Haemophysalis leporis palustris*) has played an active part in spreading the virus among rodents and ticks throughout the country. It is possible that Rocky Mountain spotted fever may develop greater prevalence in this state. That more cases do not occur in view of repeated exposure to ticks on the part of thousands who frequent rural areas, is surprising. In a survey of ticks conducted in Minnesota in 1931 by Dr. R. G. Green, of the University of Minnesota Medical School, in cooperation with

Dr. Parker, it was found that among several thousand ticks collected, one per cent of the dog ticks and two per cent of the rabbit ticks showed evidence of harboring the virus of Rocky Mountain spotted fever.

### PREVENTION

A specific vaccine made from tick virus and developed by Spencer<sup>9</sup> and Parker has been used for about nine years. The vaccine is difficult and expensive to prepare. It has proved of great value in prophylaxis but is not used in treatment of the disease. Prevention depends upon avoidance, insofar as practicable, of tick bites, and of direct contact with ticks.

### SUMMARY

Rocky Mountain spotted fever has been reported in areas representing the greater portion of the United States and southern Canada. The first case in Iowa was reported to the State Department of Health in June, 1933. Five cases were reported in this state in 1933 and six cases in 1934. East of the Rockies, the common dog tick (*Dermacentor variabilis*) is regarded as the chief vector of the spotted fever virus. Recognition of the disease is dependent upon the diagnostic acumen of attending physicians and the aid of laboratory tests. Lack of specific therapeutic measures emphasizes the preventive aspects of this condition.

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### Discussion

Dr. H. E. Stroy, Osceola: It would be rather difficult to improve on Dr. Jordan's masterful presentation of this subject. He has given us the historical background as well as a complete picture of the epidemiologic aspects of Rocky Mountain spotted fever. Therefore I shall confine my remarks to a short discussion of the clinical and pathologic picture of this disease.

As the name implies, the most striking feature of this disease is the eruption occurring on patients bitten by the infected tick. This eruption is so characteristic that, once seen, it can be easily recognized

in another case. The macular, measles-like patches, bluish-brown in color, occurring first on the wrists, ankles and forehead, thence spreading over the whole body, present a picture not easily forgotten. The duration of this eruption is usually from ten days to two weeks, which carries it well beyond the duration of other common febrile eruptions.

I was fortunate enough to have been attending physician in two cases of spotted fever, both of which I was able to observe almost from the onset of the infection to clinical recovery. Aside from the eruption described, I was much impressed by the profound malaise and extreme prostration manifested in these patients. Muscular pains, headaches and weakness were the predominating complaints. In both of my cases symptoms were ushered in by a severe chill. Epistaxis was an alarming symptom which, if uncontrolled, might easily have swung the balance away from a favorable outcome. A continuous and high fever was a constant finding which was controlled with the utmost difficulty.

As Dr. Jordan has pointed out, the chief laboratory aid in establishing a diagnosis consists of an agglutination test known as the Weil-Felix reaction. During convalescence the diagnosis can be verified by the so-called protection test. The blood picture shows a fairly constant polymorphonuclear leukocytosis. Albuminuria seems to be a common finding.

Treatment is symptomatic, since we have no specific agent in this disease. Hospitalization is desirable and attention should be focused on controlling hyperpyrexia as well as instituting general supportive measures. Tube feedings may become necessary as was the case in one of my patients who had lapsed into coma for a period of two weeks.

In view of the fact that there have been reported eleven cases of spotted fever over a widely distributed area in this state, I am of the opinion that this disease is more prevalent than is commonly supposed. No doubt there are a number of cases in Iowa each year which go unrecognized.

In summarizing the paper read by Dr. Jordan it seems to me that the message he has brought to us is this: that, even though comparatively rare, Rocky Mountain spotted fever can and does occur in Iowa. Every rural practicing physician in this state should become "spotted fever conscious," always remembering the possibility of this infection in every febrile disease which presents an atypical eruption of unknown origin.

#### NEPHROPEXY, INDICATIONS FOR, OPERATIVE PROCEDURE AND RESULTS\*

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I have written this paper with some temerity, keeping in mind the overenthusiasm a few decades ago of numerous well intentioned physicians on the surgical fixation of movable kidneys, and

also bearing in mind the extreme conservatism practiced, until the last few years, due to the many bad results obtained during that period of enthusiasm.

According to Thomas, "The history of nephropexy may conveniently be divided into seven periods: (1) ignorance, until 1495, when Mesue of Venice first wrote on the subject; (2) recognition, when Pedemontanus, in 1581, recorded a case, and a hundred years later when Riolan observed cases, considering stones and tumors as causative factors; (3) complaisance for 150 years until 1841, when Rayer published his epochal classic describing seven cases so scientifically that anatomically, symptomatically, diagnostically and therapeutically nothing was left to add for eighteen years, when Dietl described his symptom complex, or 'crisis'; (4) progression, when, in 1878, Martin performed two nephrectomies, and three years later Hahn did the first suspension; (5) overenthusiasm, championed by Schede in Germany, Albarran in France, Morris in England and Edebohl, Kelly and many others in this country and abroad, who did suspensions on all provocations; (6) doubt, from 1885 to 1900, when Glenard, supported by Israel and Tuffier, contended that nephropexy was not a disease in itself but simply a counterpart of a general visceroptosis; (7) truth, or the modern conception, founded on the revelations of the cystoscope, pyelography, intravenous injection of sodium 2-oxo-5-iodo-pyridine-N-acetate and improved operative technic, as a result of which we believe certain facts have been deduced and demonstrated warranting a mean position between radicalism and conservatism in favor of more and better surgery in the treatment of this condition."

Kidd<sup>3</sup> of London, in 1931, advocated surgical interference. Since then, this subject has been considerably revived, numerous articles have appeared in the literature, and the pendulum is gradually swinging toward nephropexy, when indicated. Of course, there is still a considerable number of opponents who hold that the patient derives no benefit, some even claiming the condition to be worse postoperatively.

No case of movable kidney should be suspended unless a proper history has been taken, a thorough physical examination made to eliminate other pathologic conditions, and a complete cystoscopic examination, including pyelograms, made in the Trendelenburg and upright positions in order to determine the complete excursion of the kidney and arrive at the extent of kidney and ureteral damage.

At the present time there are three views on the surgical fixation of nephropexy. The first group

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is composed of those who believe surgery should not be practiced. Of course, this group is constantly thinking of the bad results obtained twenty-five years ago. Those in the second group feel that surgery should not be resorted to unless some definite pathologic condition of the kidney or ureter can be determined. The third group is composed of those who contend that all nephrop-tosis should be surgical if the symptoms, such as pain, etc., point toward the kidney, regardless of the fact that no definite pathology is found. This group thinks, if the symptoms persist and no effort is made to correct the condition, ultimately there will be definite changes in the kidney and ureter. In other words, why wait for the horse to be stolen before the barn is locked?

**Mechanics:** The normal mobility of the kidney is from two to five centimeters, the average being three and five-tenths, or approximately one inch. In increased mobility the kidney slides down the posterior abdominal wall and frequently rotates transversely with the renal pedicle as its axis. This rotation can take place with very little ptosis, yet may produce a kinking of the ureter. Herrick has shown that kinking is more common in the upper portion of the ureter. This can be accounted for because the lower five-sixths of the ureter is attached to the peritoneum. A temporary kink may be evidence when the patient is in an upright position. When the patient is in a prone position the kidney usually returns to its normal bed, and complete relief may be experienced. The kink may become permanent. Then, naturally, more serious complications develop, such as urinary stasis, pyelitis, etc.

**Occurrence:** Nephroptosis is more common in the female and is found more frequently during and after the childbearing age. In other words, it is a condition of adult life. It is also encountered more often on the right side, but may be bilateral. Contrary to the old belief that this condition was found only in the thin, long-waisted individual, due to lack of fat around the kidney, it has been definitely determined, in our series, at least, and since the advent of the cystoscope and pyelography, that it is just as frequent in the obese, shortwaisted female. In our series we have found that thirty-one per cent of the females and three per cent of the males examined have had abnormal mobility. It is our practice to make pyelograms in the Trendelenburg and upright position in all complete cystoscopic examinations.

**Symptomatology:** The more common symptoms presented in cases of nephroptosis are pain, gastro-intestinal and nervous. Pain is the principal and most prominent symptom, varying from a dull pain, usually arising in the epigastrium and

referred to the kidney area, to a lancinating colicky type simulating Dietl's crisis, radiating down the course of the ureter on the side involved to the bladder, groin, testis, labia or thigh. The pain is more noticeable in the upright position or walking about, and complete relief is usually noticed when the patient is in the prone position.

There are numerous explanations for the cause of pain. Knapp claims that it is due to pressure on the trunks of the lumbar plexus, while Edebohls maintains that it is due to pressure on the solar plexus. There are others who claim that it is due to dragging on the peritoneum, vascular pedicle, common bile duct or twisted ureter. I feel that the best explanation is that of Birdsall, whose theory is that anatomically the pain is due to traction upon, and irritation of, the sympathetic nerves which are derived from the renal plexus, with contributions from the solar and aortic plexuses. He also states that, in diseases of all organs supplied by the sympathetic system, stimulation of afferent sympathetic fibers is transmitted over the rami communicantes to the corresponding segments of the spinal cord and from here sensory impulses are conveyed to certain regions producing sensations of spontaneous pain, hyperesthetic areas, and persistent spasmodic contractions of striated muscles. Whatever the cause, overdistention of the kidney pelvis will invariably reproduce the same type of pain, particularly in those patients who are suffering with attacks.

The phenomenon producing the gastro-intestinal symptoms is satisfactorily described by Von Bergman Westphal and Jurasz, in that its basis is a viscerovisceral reflex between all organs supplied with unstriated muscles. The stimuli may be either mechanical or pathologic and may begin and end in the same organ, or begin in one organ and end in another. As an illustration, they cite pylorospasm with origin of the viscerovisceral reflex arising in the appendix or gallbladder. From these deductions, the gastro-intestinal symptoms of nephroptosis can well be explained.

The nervous symptoms are varied, and depend, in not a few cases, upon an irritation of a congenitally weak nervous system, upon the knowledge that a movable kidney is present, and, coupled with this knowledge is a fear that something serious is likely to occur. No movable kidney that does not give rise to pain or gastric symptoms ever produces nervous symptoms unless the patient is told of its condition. Therefore, if a ptosed kidney is diagnosed with no associated symptoms it is well not to inform the patient unless you are particularly anxious to have an extreme case of neurasthenia on your hands.

**Bladder symptoms:** There are no bladder

symptoms in the early stages except for some frequency during attacks of Dietl's crisis. When the case becomes advanced and associated with pyelitis, pyelonephritis, pyonephrosis or renal calculus you may have severe bladder symptoms and marked urinary changes.

**Diagnosis:** It is essential, in arriving at a correct diagnosis of a symptom producing movable kidney, that a very careful history be taken. Many a nephropexy has failed because a complete physical examination to eliminate other pathologic conditions had not been made. No definite conclusions can be arrived at without a complete urologic examination, including possibly both intravenous and retrograde pyelograms, in order to determine the degree of mobility and changes in the pelvis and ureter.

**Treatment:** There is a variance of opinion as to treatment. To those who hold that surgery should not be resorted to until the patient's existence becomes intolerable, we cannot subscribe. This procedure is never followed in any other surgical condition when a definite diagnosis can be made. Again, there are others who hold that wearing a suitable kidney binder is all that is necessary. It has been our experience that binders, while they give relief in a considerable number of cases, only do this while worn, but a permanent cure is not produced. It has also been our experience, for some unknown reason, that binders are absolutely of no value when rotation has taken place. It is generally conceded that symptomless cases should not be treated surgically. It was this type, when operated upon, that placed nephropexy in disrepute twenty-five years ago, and the same will recur if every case of nephropexy comes to surgery.

The operation, of choice, as far as we can determine, is that followed by Kelly, with a few modifications. It is the simplest and carries with it the least trauma and with very slight, if any, mortality. It consists, in the first place, of a very short incision, usually does not require cutting of any of the muscles, and the kidney is supported by three No. 10 braided silk sutures, one located in the upper pole on the posterior surface of the kidney and brought under the twelfth rib through the eleventh interspace. The other two are located near the middle and in the lower pole, on the posterior surface of the kidney, and attached to the quadratus lumborum muscle, care being taken not to injure or incorporate the first lumbar nerve. The wound is closed in the usual manner without drainage. This operative procedure should not take longer than thirty minutes, is very simple, and in our series of cases there has been no mortality.

**Postoperative care:** Patients are placed flat in bed and kept in that position for three full days, after which we permit them to be turned on the surgical side but never on the opposite side. They are kept in this position until the eighteenth day when a half back rest is permitted, on the nineteenth day a full back rest, and on the twentieth day they are permitted to be up in a chair.

The results obtained from this procedure, with few exceptions, have been very gratifying. After analyzing the exceptions, we have determined in each instance that we were not careful enough in our examination to connect the symptoms directly with the nephropexy, and in each of these cases some other pathologic condition was determined afterward. We have been able to recheck thirty-five of our operative cases, the time varying from one to ten years following nephropexy, and in this entire series we have had but one failure. This happened to be a bilateral case and the left kidney came loose from its anchorage five years after surgery. The patient was so uncomfortable that she demanded its replacement.

#### SUMMARY

1. Take a careful history.
2. Eliminate all other pathology by a very thorough physical examination.
3. Never enlighten or operate on a patient with symptomless movable kidney, regardless of degree.
4. Make a complete urologic examination with pyelograms made in the Trendelenburg and upright positions.
5. Kidneys that rotate in their downward excursion do not respond to any kind of binder.
6. Do not wait for kidney or ureteral damage before nephropexy is advised, after you are satisfied that the symptoms presenting are produced by a movable kidney.
7. Nephropexy, as described above, is a rather simple procedure and is associated with very slight, if any, mortality.

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#### CASE REPORTS

1. Name: Mrs. K. R. Date: July 12, 1933. Fifty years of age, female, white, housewife.

Family and personal history: Negative.

Chief complaint: For the past ten months has had pain in epigastrium radiating to the upper right quadrant down course of right ureter to lower right



Fig. 1. Case 1. Trendelenburg position.

quadrant, burning on urination. Complains of being quite nervous and suffers from insomnia.

Examination: Essentially negative except for tenderness over entire right side of abdomen.

Cystoscopic examination: Bladder normal. No. 6 ureteral catheter introduced to each kidney pelvis without meeting any obstruction. No residual. X-ray,



Fig. 2. Case 1. Upright position.

prone position: Kidneys normal as to size, contour and position. Ureters follow normal course. No calculus. Bilateral pyelograms, Trendelenburg position; 15 cc. of 12½ per cent sodium iodide solution introduced to each kidney pelvis. Both somewhat enlarged but minor calices sharply outlined. Bilateral pyelograms, upright position; bilateral nephroptosis left, first degree; right, third degree plus, with rotation.

Laboratory findings: Urine; straw clear, acid, 1.012, albumin and sugar negative. Microscopic; many leukocytes. Cystoscopic urines; left negative, right many leukocytes. Bilateral indigo carmen function test; appearance time normal. Color index normal. Red blood count, 4,200,000; leukocytes, 10,000; polymorphonuclears, 42 per cent; lymphocytes, 56 per cent; hemoglobin, 85 per cent. Coagulation time, three minutes.

Diagnosis: Bilateral nephroptosis; right, third degree plus, with rotation; left, first degree.

Operation: July 15, 1933. Right nephropexy (Kelly).

We have contacted this patient several times since surgery and there is only slight improvement.

2. Name: Mrs. T. S. Date: May 6, 1933. Fifty-nine years of age, white, female, married, housewife. Family and personal history: Negative.

Chief complaint: Pain in right side. Onset sudden. Pain sharp and lancinating in right side and back and radiates to right vulva. Pain is more or less con-



Fig. 3. Case 2. Upright position.

stant but she has attacks when it is spasmodic in character. Appetite fair. Constipated. States that she had had recurrent attacks of pain in epigastrium which on close questioning was referred to right upper quadrant. Some frequency of urination.

Examination: Essentially negative except for systolic and presystolic mitral blow at apex. Marked tenderness over epigastrium and entire right side. Right kidney palpable and movable. Interne's impression: 1. Dietl's crisis. 2. Cholelithiasis.

Cystoscopic examination. Bladder normal except for slight inflammation around right ureteral orifice.

No. 5 ureteral catheter introduced to right kidney pelvis without meeting any obstruction; 14 cc. of clear kidney residual aspirated. X-ray, prone position; left kidney normal as to size, contour and position; right kidney somewhat larger than normal, but normal as to contour and position. Two definite shadows noted just above the upper pole of the right

Examination: Temperature 99 degrees; pulse 92; respirations 20. No enlargement of the heart. Murmur present inside of apex which is not constant. Probably functional. Slight tenderness over right kidney region, otherwise negative.

Cystoscopic examination: Bladder inflamed over entire surface, no doubt chronic. Spurts of blood



Fig. 4. Case 2. Six months check up.

kidney which are no doubt gall stones. No renal, ureteral or vesical calculi present. Right pyelogram, Trendelenburg position; 40 cc. of 12½ per cent sodium iodide solution introduced to right kidney pelvis without producing distress. Kidney pelvis greatly enlarged. Minor calices somewhat blunted. Shadows in region of gallbladder still present. Right pyelogram, upright position: Third degree ptosis with marked angulation of upper one-third of ureter. Shadows in region of gallbladder still present. Graham Coli: Positive for gall stones.

Laboratory findings: Urine; cloudy straw, neutral, 1.019, albumin and sugar negative. Microscopic; many mucous shreds, few epithelial cells, many leukocytes. Red blood count, 4,000,000; leukocytes, 7,000; hemoglobin, 80 per cent. Coagulation time, four minutes. Function test, indigo carmen; right, normal; left, considerably below normal.

Diagnosis: 1. Nephroptosis, right third degree plus, with angulation of ureter. 2. Cholelithiasis.

Operation: May 15, 1933. Right nephropexy.

Although this patient has not had her gall stones removed, she has been very comfortable and free from above-mentioned symptoms.

3. Name: Mrs. E. L. Date: February 18, 1930. Forty-seven years of age, female, white, married, housewife.

Family and personal history: Negative.

Chief complaint: Early in December 1929 patient developed a painless hematuria. This subsided in a few days but a short time before admission to the hospital, it returned. At no time has there been any pain. Thinks she has lost a small amount of weight. Has had a bad cold but no sore throat. At times has been nauseated without any reference to food.



Fig. 5. Case 3. Upright position.

were noted from the right ureteral orifice. No. 6 ureteral catheters were introduced to each kidney pelvis without meeting any obstruction; five cc. of bloody residue aspirated from right, none from left. X-ray, prone position, kidneys normal as to size, contour and position. Ureters follow normal course. No calculus. Bilateral pyelograms, Trendelenburg position; 40 cc. of 12½ per cent sodium iodide solution



Fig. 6. Case 3. Check up, prone position.

introduced to each kidney pelvis without producing any sense of fullness. Both kidney pelvises were greatly enlarged, more especially the left. The minor calices were blunted. Both ureters were greatly enlarged from the ureteral pelvic junctions down to the bladder and somewhat tortuous. Some of the fluid, especially from the right side, had refluxed into the bladder. Bilateral pyelograms, upright position, no



evidence of ptosis on the left side. Third degree ptosis on the right. The lower pole of the right being about one and one-half centimeters below the crest of the ilium. The left kidney pelvis and the left ureter remained as in the Trendelenburg position.

Laboratory findings: Urine; cloudy amber, acid, 1.014, albumin trace, sugar negative. Microscopic; red blood cells many, leukocytes few. Blood; hemoglobin 80 per cent; leukocyte count 10,000. Wasser-



Fig. 7. Case 3. Check up, upright position.

mann negative. Urea nitrogen 45.5 milligrams per 100 cc. blood. Bilateral indigo carmen function test; appearance time normal. Color index normal. Guinea pigs negative for tuberculosis.

Diagnosis: 1. Nephroptosis right three degrees. 2. Pyonephrosis and hydro-ureter, bilateral. 3. Renal hematuria, right. 4. Chronic cystitis.

Operation: February 25, 1932. Right nephropexy.

Check up: June 27, 1932. Kidney in normal position. This patient is greatly improved.

4. Name: Mrs. H. P. Date: June 6, 1931. Thirty-four years of age, white, female, married, housewife, registered nurse.

Family and personal history: Negative.

Chief complaint: This patient has been more or less of an invalid for a number of years with pain in back, frequent attacks of cystitis, with presence of mucous shreds and sometimes blood in urine. Pain originates in epigastrium and is referred to right kidney area. Usually worse in morning when arising requiring use of binder for relief. Right side becomes extremely sore at times, even to touch. She usually has spasmodic type of pain accompanied with frequency, dysuria and hematuria. She is only relieved by bladder irrigations and increased fluid intake. She has had kidney lavage on several occasions with some relief.

Cystoscopic examination: Bladder normal. Ureteral orifices normal. No. 6 ureteral catheter introduced to each kidney pelvis without meeting any obstruction; five cc. of kidney residue aspirated from left kidney pelvis; three from right. X-ray, prone position, kidneys normal as to size, contour and composition. Ureters follow normal course. No calculus.

Bilateral pyelograms, Trendelenburg position, six cc. of 12½ per cent sodium iodide solution to right kidney pelvis producing slight sense of fullness; four cc. to left, producing a sharp pain in kidney area. Pyelograms show normal peivises. Both kidneys in normal position. Ureters follow normal course. Up-



Fig. 8. Case 4. Prone position.

right position, both kidneys ptosed. Lower pole of right even with crest of ilium. Lower of left about two centimeters above the crest. Both kidneys were rotated.

Laboratory findings: Urine, cloudy straw, alkaline, 1.022, albumin, very slight trace; sugar negative. Cystoscopic urine; right kidney, uric acid crystals, epithelial cells few. Left kidney, epithelial



Fig. 9. Case 4. Upright position.

cells few. Blood; hemoglobin 70 per cent; leukocyte count 8,000. Guinea pigs negative for tuberculosis.

Diagnosis: Nephroptosis right.

Operation: June 17, 1931. Nephropexy right. Kelly operation.

This patient is a physician's wife and has been under more or less constant observation since surgery. The results have been more than satisfactory.

5. Name: Mrs. M. S. Date: July 18, 1931. Thirty years of age, female, white, housewife.

Family and personal history: Negative.

Chief complaint: Pain of left kidney for past six years. This pain is sharp lancinating, and radiates down to groin and labia. Pain comes on suddenly and lasts for a few days to a month, with a period in between of ease. Just before pain begins she has a burning and frequency of urination.



Fig. 10. Case 5. Upright position.

Examination: Essentially negative, except for marked tenderness over both kidney areas, more especially the left on percussion.

Cystoscopic examination: Bladder normal. No. 5 ureteral catheters introduced to each kidney pelvis without meeting any obstruction; six cc. of kidney residue aspirated from left pelvis, none from right. X-ray, prone position; right kidney normal as to size, contour and position; left kidney in normal position, somewhat enlarged and several calculi located



Fig. 11. Case 5. Three months check up.

in inferior calyx. Bilateral pyelograms, Trendelenburg position; nine cc. of 12½ per cent sodium iodide solution introduced to right kidney pelvis; 40 cc. to left. Both kidney pelvises show evidence of

damage. Upright position; left kidney in normal position; right kidney ptosed, extreme third degree with rotation.

Laboratory findings: Urine; straw cloudy, acid, 1.020, albumin trace, sugar negative. Leukocytes many. Bilateral indigo carmen function test; appearance time, right ten minutes; left twenty-one minutes. Color index; right normal; left subnormal. Blood; hemoglobin, 80 per cent; leukocytes 10,000. Coagulation time, four minutes. Urea nitrogen seven milligrams.

Diagnosis: 1. Right nephroptosis, third degree plus. 2. Renal calculi left.

Operation: July 21, 1931. Right nephropexy (Kelly).

It was thought advisable to place right kidney in normal position before left nephrectomy was performed. However, this patient has improved to such a degree that it has been impossible to get her into the hospital for the nephrectomy.

6. Name: Mrs. L. E. D. Date: June 23, 1933. Forty-three years of age, female, white, housewife.

Family and personal history: Negative except that her mother died of diabetes.

Chief complaint: This patient had been ill for a number of years. She was complaining of dysuria, pain beginning in right lumbar region and radiating down to lower right quadrant. Marked frequency with some nocturia. Patient dates her trouble back ten years and has had the above symptoms periodically.

Examination: Essentially negative except for tenderness over right lumbar region and lower right quadrant.



Fig. 12. Case 6. Trendelenburg position.

Cystoscopic examination: Entire bladder wall inflamed. No. 5 ureteral catheters introduced to each kidney pelvis without meeting any obstruction. X-ray prone position; kidneys apparently normal as to size, contour and position, ureters follow normal course, no calculus. Bilateral pyelograms, Trendelenburg position; ten cc. of 12½ per cent sodium iodide solution introduced to each kidney pelvis. Both kidney



pelvises somewhat larger than normal, more especially the right. Minor calices of right blunted, left normal. Right ureter greatly dilated from the ureteral pelvic junction down to a point slightly below the brim of the pelvis. Bilateral pyelograms, upright position; nephroptosis, third degree right.

Laboratory findings: Urine, cloudy straw, alkaline, 1.077, albumin moderate trace, sugar negative. Microscopic; leukocytes many, occasional red blood cell. Cystoscopic urine; right, many leukocytes, few red blood cells; left, essentially negative. Blood; hemoglobin 80 per cent; leukocyte count 9,000.



Fig. 13. Case 6. Upright position.

Coagulation time four minutes. Indigo carmen function test; appearance time, right kidney twenty minutes; left kidney normal.

Diagnosis: Nephroptosis right, third degree. Hydronephrosis right. Hydro-ureter, right.

Operation: June 28, 1933. Right nephropexy.

Check up: One month after surgery. Right kidney in normal position.

This patient is the wife of a local physician and has been kept under close observation for the past year and to date the results are excellent.

7. Name: Mrs. E. L. Date. Date: March 13, 1933. Forty years of age, white, married, housewife.

Family and personal history: Negative.

Chief complaint: Two years ago passed blood in urine. Constant desire to urinate. Complaints of persistent backache in lumbar region, radiating anteriorly down course of ureters and inner side of thighs. If patient is on her feet, and especially after walking, has a constant desire to urinate. Complaints of an uncomfortable feeling in region of stomach and lower abdomen, but no nausea or vomiting. Very nervous.

Examination: Blood pressure 124/84. Very obese Italian female. Height, five feet three inches. Weight, two hundred twenty-five pounds. Tenderness over both kidneys. Otherwise negative.

Cystoscopic examination: Bladder wall somewhat inflamed. No. 6 ureteral catheters introduced to each kidney pelvis without meeting any obstruction. No residue, normal return. Bilateral pyelograms, Tren-

delenburg position; six cc. of 12½ per cent sodium iodide solution introduced to each kidney pelvis without producing any distress. Pyelograms were normal. Some reflux of media into bladder. Bilateral pyelograms, upright position; bilateral nephroptosis, third degree plus.

Laboratory findings: Negative except for occasional pus cells in right and left urines. Function test normal.

Diagnosis: Bilateral nephroptosis, third degree.

Operation: March 14, 1933. Right nephropexy. October 20, 1933. Left nephropexy. Both kidneys normal but very movable.

We have observed this patient at frequent intervals since surgery and her improvement is more than satisfactory. This case is given to show that movable kidneys are found in the obese as well as the thin individual.

### THE UNDESCENDED TESTICLE\*

With Special Reference to Treatment with Gonadotropic Hormone and the Torek Operation.

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Testicular mal-descent has a definite detrimental effect upon the individual so affected. For many years this has been realized, but no method of correction was commonly accepted as satisfactory. Since the popularization of the Torek operation by Meyer we have more generally in use, an operative procedure giving good results in over 90 per cent of cases. Recently the introduction of gonadotropic hormone has made operation in certain instances unnecessary. We wish to discuss briefly this subject with special reference to these two therapeutic measures.

Early in fetal life testicular development starts from the inner ridge of the Wolffian body at the level of the third lumbar vertebra. At about the sixth fetal month migration through the inguinal canal normally begins. The processus vaginalis precedes the testicle to its scrotal position. During the ninth month complete descent has occurred with fusion of the processus vaginalis except at its lower end where it forms the tunica vaginalis testis.

Several etiologic theories for undescend of testicles derive support from these embryologic facts, such as stenosis of the external ring and abnormal development of the gubernaculum. Fetal peritonitis which causes adhesions retaining the testis has been accused. Others maintain periorchitis due to trauma during difficult birth results in fixation. Finally it was thought that short spermatic vessels made complete descent impossible. The

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many theories promulgated from time to time bear mute evidence that the etiology remains obscure.

Testicular function includes spermatogenesis and the production of an internal secretion. Elaboration of the internal secretion continues in the undescended testicle, but spermatogenesis gradually disappears. Moore, in well controlled ex-



Fig. 1. Patient described in Case 2 eighteen months after Meyer-Torek operation on right side, showing a testicle of normal size free in the dependent scrotal position, and eight months after hormonal therapy with no change in position of the unoperated testicle.

periments on animals, has definitely shown that when the temperature of the testicle increases to that of the body, the spermatogenic function becomes impaired and later lost. The slightly lower than body temperature of the scrotum is necessary for the formation of spermatozoa. This clearly indicates the cause of lost spermatogenesis occurring in undescended testicles when untreated. These testicles should be brought down either medically or surgically before puberty to preserve genetic function. Occasionally the return to the scrotum of mal-descended testicles some years after puberty has resulted in fertility.

Psychic depression caused by this abnormality of the genitalia often influences the entire life of these individuals, beginning when the boy first becomes exposed to other boys, and the condition is accentuated by contemplated marriage. Retained testes frequently become complicated in one or more of several ways. The constant association with an actual or potential hernia may in itself require surgery. Furthermore, the retained testis because of its position is subject to repeated trauma, often causing painful orchitis, which not infrequently brings the patient to a doctor for relief. Many authors feel that the incidence of malignancy and acute and chronic infections is

higher in the ectopic testis, and add these as further indications for treatment.

The medical treatment is founded upon animal experimentation. In 1926 Ascheim and Zondek found substances in the urine of pregnancy similar in activity to the hormones of the anterior pituitary gland. In 1932 Engle precipitated the urine of pregnancy with alcohol and after extraction several times with ether, finally obtained a substance with gonadotropic properties free from estrin. Various names for this substance are Antuitrin-S, Follutein, Rho I and II, and Prolan A and B. Injections of this extract into pre-pubertal monkeys whose testes do not descend until puberty, resulted in rapid descent in eight out of ten animals used. This substance has since been used successfully on human beings, but when reports in the literature do not accurately describe the position of the testicle before treatment was undertaken, one encounters some difficulty in evaluating the results.

The gonadotropic substance marketed under the trade names of Follutein and Antuitrin-S has been standardized in rat units. The dosage recommended varies from fifty rat units two or three times weekly to three hundred rat units daily given intramuscularly. An occasional general reaction has been reported, but only one so severe that discontinuance of the treatment was necessary. Generally only a slight transient burning at the site of the injection occurs.

For many years the Bevan operation has had no serious competition for first choice in the surgical treatment of ectopic testes. The main characteristic of this procedure is a purse-string suture which will not permit the testis to slip back out of the scrotum after replacement has been accomplished.

More recently the operation devised by Franz Torek and popularized by Meyer has supplanted to a large extent the Bevan procedure. One finds a detailed description of the operative technic in the writings of its author and those of Wangenstein who introduced a minor variation. It shall, therefore, not be recounted here. It is sufficient to say that the testicle in its scrotal position is anchored to the fascia lata of the thigh and after a variable period detached. During this period the boy may do almost anything but ride a bicycle. This maintains the lengthening of the cord over a period long enough to preclude any possibility of retraction. In addition the abnormally small scrotum usually seen in these cases becomes stretched slowly to a normal size and the testicle finally rests in the bottom of a normal sized scrotum. The Torek procedure offers no additional technical difficulty since obtaining length of the



cord (wherein one encounters the most difficulty) is equally necessary in both procedures. The second stage consists merely of separating the testicle from the thigh and does not require hospitalization. The Meyer-Torek operation in the hands of numerous surgeons consistently gives over 90 per cent good end results, which cannot be said for the Bevan operation.

Case 1. A boy twelve years of age, presented himself for treatment with the chief complaint of obesity. He was delivered normally with a right club foot. Past history included pylorospasm, eczema, hay fever, measles, mumps, whooping cough and chickenpox. No sudden gain, but rather an excessive, constant gain in weight had occurred. Physical findings consisted mainly of a pelvic-shoulder-girdle obesity with bilateral undescended testicles. The right testicle moved freely in the lower inguinal canal; the left was palpable high in the canal, and not movable. Roentgen examination disclosed a normal sella with no bone erosion. At the end of eleven months on a reduction diet, although loss of weight resulted, the testicles remained as previously described. Nine hundred and fifty rat units of Antuitrin-S (Parke-Davis) were administered in five weeks, with no general or local reaction. The right testicle was lodged in the scrotum during treatment; the position of the left testicle remained unchanged. Re-examination ten months later disclosed the right testicle still lodged in the dependent portion of the scrotum and the left in the original position high in the inguinal canal.

Case 2. A healthy boy twelve years of age, giving the history of a normal birth and no significant illnesses presented himself for treatment. Physical examination disclosed bilateral undescended testicles, both of which were very small and lay high in the inguinal canal. A Meyer-Torek operation was performed on the right side by Priestley. A few months later, when Follutein came to our attention medical treatment was advised before the patient was submitted to surgery on the other side. Accordingly Follutein (Squibb) 2,250 rat units was administered over a six-weeks' period. No untoward effects followed the injections. No change in position of the un-operated testicle had occurred after eight months' observation. Figure 1 shows this patient eighteen months after a Meyer-Torek operation on the right side and eight months after the medical treatment. Note that the operated testicle hangs freely in a normal sized scrotum and that no change occurred on the non-operated side after Follutein therapy.

A literary survey and our own experience with these cases leads us to the following conclusions:

1. A combination of anatomic and hormonal factors cause testicular mal-descent.

2. Antuitrin-S and Follutein do not bring about descent of all retained testes, although the percentage of successful attempts warrants trial.

3. Medical treatment should first be instituted. In the event of failure the Meyer-Torek operation remains as the procedure of choice.

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#### Discussion

**Dr. R. H. Foster, Woodward:** I was very much interested in this paper by Drs. Priestley and Cohen, particularly because I have investigated the question of undescended testicle in feeble-minded boys. In our patients under eighteen years of age, we found thirty-nine boys with this condition giving an incidence of 10.6 per cent. Among those over eighteen years of age, we have five cases which gives a percentage of 1.2, about ten times the normal rate. I believe that if a sufficient number of normal boys under eighteen years of age were examined, the condition would be found more common than we usually consider. I believe also that the incidence is largely based on the examination of recruits, all of whom exceed eighteen years of age. My belief that this condition is more frequent in normal boys than has been thought is confirmed by Dr. Drake of St. Paul, who found eleven cases in examining 260 boys over a period of six years. Unfortunately there is little I can add to the treatment as we have had no opportunity to treat these cases. I believe that a considerable number will spontaneously descend before the patients reach the age of eighteen. In view of the nature of the condition, it would seem to me that surgical treatment is the most logical.

#### CLINICAL NOTES FROM THE COLLEGE OF MEDICINE

#### PRELIMINARY REPORT OF PAVAEX TREATMENT AT THE STATE UNIVERSITY OF IOWA

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From the Department of Internal Medicine

In 1812, Sir James Murray,<sup>1</sup> of Dublin, observed the effects of rarefied and condensed air on animals and human subjects. He found that the skin became turgid, red, and hot in a rarefied atmosphere. Herrmann<sup>2</sup> noted that it was Edgar Bluck, of South Hamstead, England, who first applied the alternation of suction and pressure, as he described it, "to bring about an influx and efflux of the blood in the part or parts affected." Herr-

mann and Reid<sup>3</sup> were able to show that collateral circulation could be increased by the application of alternately negative and positive environmental pressure to an extremity in which the larger arterial pathways were occluded, and in 1932 Herrmann<sup>4</sup> designed apparatus to produce these variations of pressure rhythmically, gradually, and continuously. Since this was essentially passive vascular exercise, the name "Pavaex" was coined from the first two letters of each word.

Theoretically, the application of alternately negative and positive environmental pressure to an extremity affected with occlusive vascular disease should increase the flow of blood in two ways: first, by increasing the pressure gradient, since, according to Poiseuille's law, the amount of fluid flowing through a rigid tube depends on the fall of pressure along the tube (Landis and Gibbon<sup>5</sup>); and second, by overcoming the hypertonic tendencies of arteries which remain relatively free from the sclerotic process (passive vascular exercise). In actual practice it has been demonstrated that the flow of blood does increase, whatever the mechanism. Landis and Gibbon<sup>5</sup> obtained an average rise of 7.1 degrees, centigrade, in the surface temperature of the toes of patients afflicted with occlusive vascular disease, whereas in controls the rise averaged only 1.9 degrees, centigrade.

A careful survey of clinical results to date indicates that:

1. The rest pain of ischemia is relieved, at least temporarily, for many patients who have been kept awake by severe rest pain fall asleep soon after treatment is begun.
2. Intermittent claudication becomes less severe and does not appear as soon.
3. Indolent ulcers and superficial gangrene often heal in a manner not observed with other methods of treatment.

Selection of patients for Pavaex therapy involves both a clinical estimation of the kind and amount of vascular damage, and skin temperature measurements before and after employing an efficient method of producing peripheral vasodilatation. Contraindications to Pavaex treatment must remain largely theoretical until more experience is gained. At present it may be stated provisionally that:

1. Large pressure variations cannot be used indiscriminately without careful supervision.
2. Active cellulitis or suppurative processes contraindicate treatment because of the danger of spreading the infection.

3. The presence of osteomyelitis makes it unlikely that satisfactory healing will ever occur.

4. Treatment when large varicose veins are present may cause embolism, although this has not been reported.

5. When there are large gangrenous or sloughing areas only temporary relief has so far been observed; in such cases one should not expect to do more than lower the level of amputation.

A more detailed report of our results with Pavaex treatment will appear later. The following selected case summaries illustrate good and poor results in three different types of occlusive vascular disease.

Case 1. Arteriosclerosis obliterans, diabetes mellitus. The patient was a white male, seventy years of age, who had had diabetes for twenty-two years. Frank gangrene of the right foot had necessitated an upper leg amputation in November, 1933. Since that time he had followed his diet and taken insulin regularly. Ten days before his last admission to the hospital, in February, 1935, he noted a small ulcer over the left ankle and a blister on the heel. There had been burning pain in the left foot, and numbness of the toes; the pain had often extended as high as the knee. Examination disclosed an indolent ulcer 2.5 centimeters in diameter over the left internal malleolus, many large calluses on the foot, and a blister on the heel. The foot was cold, but small pulses were felt in both the posterior tibial and dorsalis pedis arteries. After 151 hours of treatment the foot became warm and stayed warm, the parasthesiae and pain disappeared, and the ulcer was showing a distinct tendency to heal. The patient's distress had been entirely relieved, and he was much gratified.

Case 2. Arteriosclerosis obliterans. The patient was a white male, seventy-four years of age, who had noted intermittent claudication for four months. For two months a chronic ulcer had been present at the base of the second left toe. There had also been severe burning pain in the left foot for two months. On examination there was found a necrotic ulcer about two centimeters in diameter on the dorsal surface of the foot at the base of the second left toe. The edges of the ulcer were undermined, it was surrounded by a red, tender areola, and necrotic tendon was visible in its base. Both feet were cold and the toe nails showed trophic changes. The dorsalis pedis and posterior tibial pulses were faintly palpable on the right and absent on the left. The prospect of benefit from Pavaex treatment was thought to be poor in this



case because of the closure of the main arterial channels, the redness of the feet indicative of advanced arteriolar involvement, and the presence of the infected ulcer and necrotic tendon. Nevertheless, the patient was given fifty-nine hours of treatment. The surface temperature of the foot increased somewhat, but the area of gangrene increased until it included all of the second left toe. Amputation was done through the leg because the surgeon felt that the blood supply had been increased enough to justify a mid-leg rather than the mid-thigh amputation which had been contemplated originally. However, the stump failed to heal and a mid-thigh amputation was eventually performed.

Case 3. Thrombo-angiitis obliterans. The patient was a white male, forty-four years of age, who had been suffering from thrombo-angiitis obliterans of all four extremities since 1917. In September, 1934, small ulcerations appeared on the tips of the third and fifth fingers of the left hand. The ulcer on the little finger healed, but that on the third finger persisted. Pain in the left hand and arm had been severe. A discharging ulcer was present on the tip of the third left finger; the hand was cold, and the radial pulse was very small. The patient received 128 hours of Pavaex treatment. All pain disappeared, the hand grew warm and stayed warm, and the ulcer healed. He was free from distress at the time of his discharge.

Case 4. Thrombo-angiitis obliterans. The patient was a white male, thirty-nine years of age, who had noted intermittent claudication occasionally since February, 1931. Strange to say, his feet had never been unusually cold, and he had not had superficial thrombophlebitis. On January 17, 1935, he had what was undoubtedly occlusion of a small coronary artery, from which he made a quick recovery. Both feet were normally warm, there were no signs of phlebitis, and only one toe nail showed questionable trophic change. Postural color changes were definite, however, and no pulses could be felt below the femoral in either leg. The electrocardiogram was very suggestive of recent coronary occlusion. The patient received 100 hours of Pavaex treatment, following which the lumbar sympathetic ganglia were irradiated. No objective changes in his condition could be detected, although the patient thought he was a little better and could perhaps walk a little farther before claudication appeared.

Case 5. Embolism of the left popliteal artery. The patient was a white male, sixty years of age, who suffered primarily from coronary arterio-

sclerosis, coronary occlusion, and cardiac failure. On the day he was to be allowed out of bed he noted that his left foot was painful and cold. Upon examination it was found to be pale, cyanotic, and cold, and all the pulses below the femoral had disappeared. After eight hours of Pavaex therapy the pain and subjective feeling of coldness had vanished, and the foot was warm to the touch. Treatment was continued for thirty-one hours, at the end of which the left foot seemed actually warmer than the right, although no pulse was perceptible below the femoral.

Case 6. Embolism. The patient was a woman, sixty years of age, who on November 28, 1934, had incurred an acute obstruction, perhaps not quite complete, of the abdominal aorta at its bifurcation. She survived this accident without developing gangrene, but in January, 1935, began to have severe claudication and complained of cold feet. These symptoms had persisted until the time of her admission to the hospital on February 28, 1935. No pulse could be detected in either femoral artery or in any artery below the femorals. The surface temperature of the legs was low, but there was no discoloration of the skin. This patient received 122 hours of Pavaex treatment, after which we felt certain that the surface temperature of the extremities had risen considerably. The patient's daughter-in-law declared that the patient could walk better and farther than formerly, but the patient herself would admit very little change. The pulses in all the arteries of the lower extremities remained absent. About a month after the patient returned to her home it was learned through her son, who is a physician, that she was greatly improved.

#### SUMMARY

In general, our results are similar to those of Herrmann<sup>6</sup>, i.e., excellent in cases of sudden occlusion of a major artery, very encouraging in obliterating arteriosclerosis, and somewhat discouraging in thrombo-angiitis obliterans.

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ACUTE GLOMERULAR NEPHRITIS: A  
REPORT OF SIXTY-EIGHT CASES

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The hospital records and follow-up studies of sixty-eight patients with acute glomerular nephritis, observed during 1932, have been analyzed. Because of the numerical smallness of the series and the inherent difficulties attending such a study, definite conclusions are avoided and general trends are emphasized.

Table I indicates age and sex distribution. It will be seen that the disease is essentially one of childhood and youth, for 80.8 per cent of the patients contracted the disease during the first two decades of life. This is in accord with the findings of McPhee and Kaye<sup>1</sup> who found that 68.9 per cent of ninety patients acquired the disease before the age of twenty-one years, and the majority of these before the age of eleven. The sex difference probably has no significance inasmuch as males are generally more active and hence more exposed to etiologic elements than females.

Respiratory tract disease was the most important etiologic factor because the acute nephritis seemed to be related to it in thirty-one (45.6 per cent) of our patients. In six patients (8.8 per cent) there was association with scarlet fever, and

charge. Two of the seven patients dying during the first two decades of life, and two of the four now known to be dead of chronic nephritis, showed blood pressures during their hospital stay significantly higher than those usually seen with acute nephritis. Special renal function tests were done on twenty-six patients, and eleven of these were recorded as poor. Thirty-one patients showed a definite increase in the nonprotein nitrogen of the blood at some time during observation.

The results of the follow-up studies are recorded in Table II. It is obvious that patients

TABLE II—RESULTS OF FOLLOW-UP

Age groups (years)	Patients, number	Dead	Results		
			Alive but with chronic nephritis	Alive and well	Con- dition unknown
0-10	23	1	0	9	13
11-20	32	6	5	14	7
21-30	6	1	2	0	3
31-40	5	2	1	0	2
41-50	1	0	0	0	1
51-60	1	0	0	0	1
Totals	68	10	8	23	27

contracting acute glomerular nephritis in youth are less likely to die or be subsequently incapacitated than those acquiring it in later life. The incidence of chronic nephritis, as a possible end result, seems to be greater if the acute disease occurred during the second and third life decades. Six of the patients (8.9 per cent) at this hospital died in the acute condition, one in the first decade group and five in the second. Of these six, only one died of uremia. Two died of septicemia, following operative therapy performed upon the respiratory tract or associated sinuses. One died of rheumatic heart disease, and in two the character of death was unknown. The total mortality rate of the known dead of the present series, therefore, is 14.7 per cent.

McPhee and Kaye reported an immediate mortality rate of 5.5 per cent as contrasted with our rate of 8.9 per cent. Their rate increased with age although a minority of their cases fell into the older age groupings. Thirteen of their patients had uremia from which four died. Two of the patients with uremia were in the first decade; six in the second and five in the third to seventh life decades. Van Slyke, et al.,<sup>2</sup> recording observations of twenty-three patients with acute glomerular nephritis, found that six recovered, five directly from the acute stage, and one from eleven who developed the latent stage. Three patients passed into the chronic stage. Of the four patients

TABLE I

Age groups (years)	Patients			
	Number	Per cent	Female	Male
0-10	23	33.8	9	14
11-20	32	47.0	9	23
21-30	6	8.8	1	5
31-40	5	7.3	1	4
41-50	1	1.4	0	1
51-60	1	1.4	0	1
Totals	68	99.7	20	48

five cases (7.3 per cent) of acute nephritis followed skin conditions. The acute nephritis occurred once each as a complication of measles, osteomyelitis, diphtheria, septicemia, encephalitis, and sulpharsphenamine poisoning.

The symptoms and findings of the disease were classical and therefore are omitted. However, details concerning certain features may be of interest. Seventeen of the group presented retinal changes, although the fundi were not uniformly examined. Twenty-three were albumin free at discharge. Of twenty-three patients now alive and well, twenty had hematuria on admission but only seven of these had blood in the urine at dis-



dying, two died in the acute stage, one in the chronic stage of uremia and another of diphtheria. Their mortality rates therefore are: immediate, 8.7 per cent; total, 17.4 per cent. Aldrich<sup>3</sup> studying 129 patients in a children's hospital found that 93 per cent recovered from acute post-infectious hemorrhagic nephritis, 0.8 per cent remained clinically ill, and 6.2 per cent died. Lyttle and Rosenberg<sup>4</sup> found a 5.4 per cent mortality in children.

#### SUMMARY

From the data on sixty-eight cases of acute glomerular nephritis, and from a resumé of several similar series, it appears first, that the disease is essentially one of childhood and youth; second, that the immediate mortality rate of the acute condition is between five and ten per cent; and third, that there is a large percentage of serious sequelae, chief among which is chronic nephritis.

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### THE FINLEY HOSPITAL CLINICO- PATHOLOGIC CONFERENCES

#### X-RAY THERAPY IN LEUKEMIA

LESTER G. ERICKSEN, M.D., Dubuque  
MARTIN G. DITTMER, M.D., Colesburg

The two cases to be presented are examples of chronic myelogenous leukemia. They are of interest because each exemplifies the following characteristic features of the disease: first, the insidious onset with lack of important symptoms until it has extensively progressed; second, the necessity of routine blood examinations in patients, especially those with splenomegaly; and third, the temporary favorable response of the disease to adequate radiation.

Leukemia as a clinical entity was first recognized in 1845 by Bennett. He described a disease in which there was "suppuration" of the blood attended by enlargement of the liver and spleen. Virchow later distinguished between a type in which lymphatic enlargement predominated and one in which splenomegaly was more marked. The differential staining methods discovered by Ehr-

lich made it possible to distinguish the leukemias according to the type of leukocytes involved.

We now distinguish several different types of leukemia: acute and chronic myelogenous, acute and chronic lymphatic, monocytic, aleukemic myelosis and chloroma. By far the most common are the chronic myelogenous and the chronic lymphatic types, and they are the ones which will be considered in this discussion. The former is characterized by varying grades of splenic enlargement together with hyperplasia of the white cells of the bone marrow and the appearance of myelocytes and myeloblasts to the extent of twenty to forty per cent or more of the total leukocytes present in a given specimen of blood. In the chronic lymphatic type, hyperplasia of the lymphatic tissues and a predominance of immature cells of the lymphocyte series in the blood, are characteristic. It must be pointed out that a diagnosis of leukemia must not be made only on an increase in the white cell count. Some infections may cause a leukocytosis as high as 100,000. The changes in the maturity of the leukocytes are the important findings premortem, and postmortem there are findings of characteristic histologic changes in the tissues.

The etiology of the leukemias is unknown. They occur in animals and birds as well as humans. In some ways they resemble an infectious process but many observers are firm in their belief that the leukemias are neoplasms. The acute types occur most commonly in the first five years of life. Chronic lymphatic leukemia has its chief incidence between the ages of forty and sixty. However, all forms may occur at any age.

The diagnosis may be strongly suspected from the splenomegaly in the myelogenous or the glandular enlargement in the lymphatic type. There are other symptoms which may occur but the diagnosis rests finally with the microscopic examination of the blood smear when immature forms are demonstrated.

#### CASE REPORTS

Case 1. The patient, a white female, forty-eight years of age, was admitted to The Finley Hospital July 6, 1933, with a fracture through the neck of the right femur.

She stated that while dancing on July 4, she was suddenly released by her partner, whirled and fell to the floor. She was unable to rise and was carried to bed. The following day a physician was called and she was removed to the hospital where a roentgenogram revealed a fracture through the neck of the right femur. A routine blood examination made on admittance was as follows: white blood count, 186,400; red blood

count, 3,430,000; and hemoglobin, 65 per cent. The smears showed that 95 per cent of the white cells were myelocytes or pre-myelocytes. On physical examination the spleen was found moderately enlarged, and a diagnosis of chronic myelogenous leukemia was made. High voltage therapy was advised.

Between July 14 and 25 the patient was given a total of 740 r units in three treatments over the anterior spleen. On August 15 the white blood count was 15,000 and the spleen was not palpable. The patient was not seen from December, 1933, until April, 1935. At this time she was bedridden because of weakness. On examination the spleen practically filled the abdominal cavity. The white blood count at this time was 150,000. The splenic area was again treated with high voltage x-ray and a total of 858 r units were given in four treatments over a period of ten days. Two weeks later the white count was 15,000; the spleen was barely palpable and the patient was able to work as a waitress. She was last seen in August, 1935, and was working full time. The blood picture at this time was as follows: white blood count, 33,500; red blood count, 4,300,000; and hemoglobin, 90 per cent.

In this case the fracture of the hip had no connection with the leukemia and healed in the normal time. It is not known how long she had had the leukemia, nor can it be estimated how long it would have been before leukemic symptoms would have brought her to a physician. The value of routine blood examination was well demonstrated in this patient.

Case 2. The patient, a white male, thirty-one years of age, consulted his doctor about April 1, 1935, because of vomiting and severe pain in his upper left abdomen. He dated the beginning of his illness three months previously when he had had a tooth extracted and bled profusely. (A blood examination at this time would undoubtedly have revealed the leukemic blood picture inasmuch as a tendency to bleed is a prominent symptom of this disease). He noticed a mass in his left side five weeks previous to seeing his doctor but felt normal and continued doing farm work.

On admission to the hospital April 4, 1935, the complaints were severe abdominal pain and vomiting. His outward appearance was that of a thin but well developed male with a very ruddy complexion. The physical findings were essentially negative except for a marked enlargement of the spleen which extended one inch to the right of the mid-line and downward nearly to the inguinal ligament. The blood study revealed: white blood count, 438,400; red blood count, 3,710,000; and

hemoglobin, 50 per cent. The smears showed the white cells to be almost entirely myelocytes and pre-myelocytes with only a few adult cells.

X-ray treatment was started. Between April 16 and April 29 he was given 1792 r units over the anterior and posterior splenic area. On May 16 the spleen was not palpable and the white blood count was 15,200. On July 15 he had gained thirty pounds in weight. The white blood count was 26,400 and he felt entirely well, doing heavy farm work. He was instructed to report every six weeks, but has not done so since July 15.

#### DISCUSSION

It is well known that there is no cure for any of the leukemias, but in x-ray or radium therapy we have a very useful agent in keeping the blood count down and the patient comfortable. The use of radiation in the treatment of chronic leukemia is based chiefly on the observations of Becclere. He found that such treatments when properly carried out were followed by first, a return to a normal blood picture; second, a clinical improvement with regained weight, strength and color; and third, a reduction in the size of the liver and spleen. Health was maintained in some instances for three to six years but eventually death followed as the result of cachexia or of some cardiac, pulmonary or renal complication. The treatment has not been successful in the acute forms of the leukemias.

In treating leukemia with radiation, it makes no difference whether high voltage x-ray or radium is used as the action of both is the same. The x-ray is much easier to handle, however, and from an economic standpoint is much more desirable. We use x-ray entirely with the following factors, 200 Kv., five milliamperes, 0.5 mm. copper filter plus one millimeter of aluminum. The factors can be varied. The technical factors are not as important as a few cardinal principles which should be mentioned.

One must keep in mind that in the control of a case of leukemia it will be necessary to give multiple treatments over a period of months or years and for that reason the skin must be protected as much as possible or a burn will result. The cross-fire method should be employed exposing the spleen, treating anteriorly at one time, laterally at another and posteriorly at another, avoiding overlapping. Occasionally it may be advisable to treat the long bones but the response is not as striking when the bones are exposed. In lymphatic leukemia, the various enlarged lymph glands are exposed in much the same manner. These will shrink down in size and often become



unpalpable with a reduction in the white blood count.

It is very important not to bring the white blood count down too rapidly. A case with a very high white count will usually respond rapidly, and therefore it is advisable to give a dose of 200 to 300 r units and after waiting a week to ten days check the response with a blood count. Frequent blood examinations should be made and treatment given accordingly. The white blood count should not be allowed to drop below 15,000, and the patient will tell you he does not feel as well as when the count is allowed to remain between 15,000 and 30,000. Instructions should be given for the patient to return for observation every month to six weeks.

It is debatable whether the radiation treatment prolongs the life of the patient, but we do know that in following a regime such as outlined one is able to keep him much more comfortable for periods as long as six years. In Case 1, we feel certain that the life of the patient was prolonged. From a bedridden patient who probably would have died within a short period of time she was transformed to an active one who carries on her usual duties. In Case 2, the results of treatment, while not as dramatic, were equally satisfactory to the patient.

REPORT OF CASES FROM THE  
BROADLAWNS GENERAL HOS-  
PITAL, DES MOINES, IOWA

JULIUS S. WEINGART, M.D., JOSEPH BROWN,  
M.D., and FRANK W. FORDYCE, M.D.,  
Hospital Staff Committee

Case No. 83193. The patient, a girl eight years of age, was admitted to the hospital, January 13, 1935. Three days before entrance, while at school, she was taken ill with pain in the epigastrium. As she walked home, the pain became more cramp-like and was referred to the lower abdomen. She did not rest well that night and on the following day was nauseated, and vomited. She was given castor oil by her parents, and a large bowel movement resulted. On the third day of her illness she again had generalized abdominal pain. This was relieved after an enema; but later in the day she began to chill, and her temperature rose to 104 degrees. In the evening of that day she was brought to the hospital, and on admission her temperature was found to be 102 degrees, and her pulse rate 130.

The abdomen was found diffusely tender, but not distended, and no masses were palpable. The admitting physician described a precordial thrill, and a double mitral murmur, but these were not

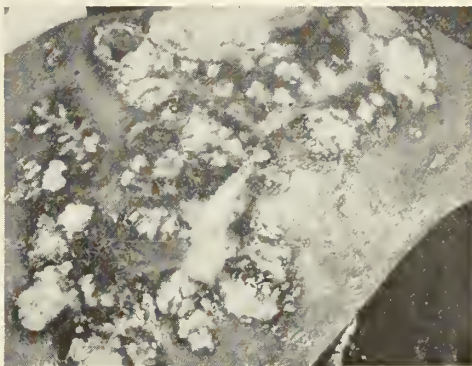


Fig. I. View of section of the liver, showing branching abscesses.

evident later. Her blood count the next day showed 17,000 leukocytes, with a fairly normal differential count. The hemoglobin was 70 per cent. The urine was normal. On her third hospital day she began to show definite jaundice. This increased without remission. Her icterus index reached 50. A blood culture taken on admission showed a profuse growth of a Gram-negative, motile organism, later identified as *B. coli*. Her temperature was of the typical septic type, with many chills. Later, the liver edge was palpable, and finally reached ten centimeters below the costal margin. She died on the sixteenth day of her illness.

The patient was seen by several members of the

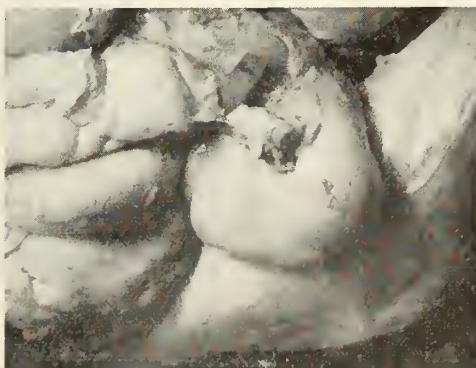
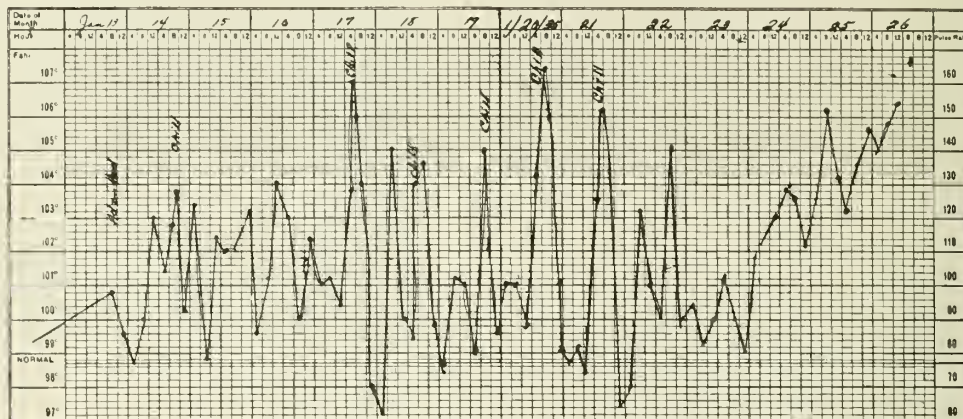


Fig. II. View of the ileocecal region at autopsy; appendix partially sloughed away; general peritonitis.

staff. Those of us who failed to make a correct diagnosis recognize, in retrospect, that due consideration of the history, and especially of the chronology of the symptoms should have led to

one. However, Dr. Gradinger, one of the house staff, did make a correct diagnosis—acute appendicitis with secondary liver abscess. Dr. Peisen also made a diagnosis of liver abscess. Autopsy showed a general suppurative peritonitis. The

tion. The first, too little known to the laity, concerns the great danger of giving castor oil to patients with abdominal pain. It would be wise for druggists to label every bottle of this too familiar remedy with a skull and cross-bones and



Temperature chart

liver was riddled with abscesses. The appendix was wrapped about with omentum, and was entirely gangrenous. On opening the portal vein, an extensive, purulent, mural thrombus was demonstrated. The pathologic diagnosis was acute suppurative appendicitis; general suppurative peritonitis; suppurative pyelophlebitis; and multiple metastatic abscesses of the liver.

Although, without doubt, the child was doomed by the time medical assistance was called, the story may be used to point out a moral or two, which, though perhaps trite, seem to need reitera-

tion. The first, too little known to the laity, concerns the great danger of giving castor oil to patients with abdominal pain. It would be wise for druggists to label every bottle of this too familiar remedy with a skull and cross-bones and

J. S. W.

#### INTERNATIONAL ASSEMBLY OF THE INTER-STATE POSTGRADUATE MEDICAL ASSOCIATION OF NORTH AMERICA

Detroit, Michigan, will entertain members of the Inter-State Postgraduate Medical Association of North America, at the international assembly of that organization, from Monday, October 14, through Friday, October 18, 1935. As in the past the mornings will largely be devoted to diagnostic clinics, while the more formal addresses will be delivered at the afternoon and evening sessions.

The annual assembly banquet will be held the evening of Wednesday, October 16. Two addresses feature the program, one by the Honorable Herbert A. Bruce, Lieutenant Governor of Ontario, Toronto, Canada; the other by Rear-Admiral Cary T. Grayson, Chairman of the American Red Cross, Washington, D. C.

A partial list of prominent speakers who will present addresses includes: Drs. Elliott C. Cutler, Boston; Hugh H. Young, Baltimore; Harold B.

Cushing, Montreal; Gabriel Tucker, Philadelphia; Alexander W. Blain, Detroit; George J. Heuer, New York; Frank R. Ober, Boston; Charles A. Elliott, Chicago; Louis H. Clerf, Philadelphia; John G. Fitzgerald, Toronto, Canada; Charles R. Austrian, Baltimore; Alfred W. Adson, Rochester; Fred L. Adair, Chicago; Clarence B. Farrar, Toronto, Canada; Loyal Davis, Chicago; David P. Barr, St. Louis; Frederick A. Collier, Ann Arbor; Robert W. Keeton, Chicago; George A. Harrop, Baltimore; George P. Muller, Philadelphia; Dallas B. Phemister, Chicago; Urban Maes, New Orleans; Frederick J. Kalteyer, Philadelphia; William J. Gardner, Cleveland; Charles H. Mayo, Rochester; Ralph A. Kinsella, St. Louis; Arthur C. Christie, Washington, D. C.; Lee W. Dean, St. Louis; James H. Means, Boston; William H. Wilmer, Baltimore; T. Wingate Todd, Cleveland, and W. Wayne Babcock, Philadelphia.



# STATE DEPARTMENT OF HEALTH



## HUMAN AND SWINE INFLUENZA

CARL F. JORDAN, M.D., C.P.H.  
State Epidemiologist

Recent years have witnessed significant developments in our knowledge of influenza. Of particular interest in this field have been certain studies of swine influenza reported by Richard E. Shope, M.D.,<sup>1</sup> of the Department of Animal and Plant Pathology, Rockefeller Institute for Medical Research, Princeton, New Jersey.

### *Swine Influenza*

Much of Shope's work has been carried out with pigs as experimental animals. He has made careful observations during outbreaks of swine influenza, occurring in Iowa and elsewhere, and described the gross and microscopic pathology of the disease. In 1928 Shope obtained material from diseased hogs in Iowa. He then demonstrated by cultural studies that swine influenza is due to a filtrable virus in symbiosis with a bacterial component, the associated bacillus being *Haemophilus influenzae suis*. Shope reported three possible types of disease occurring in pigs. The first type is that seen in an epizootic type of swine influenza, in which both the virus and *Haemophilus influenzae suis* are transferred from infected to normal animals after exposure. The second and third types are observed in experimental work. If the animal is not a carrier of *Haemophilus influenzae suis*, the virus when transferred, may cause a mild type of disease. On the other hand, if the animal is a carrier of this organism, exposure to the virus from an infected pig may cause true swine influenza.

### *Human Influenza*

Smith, Andrewes and Laidlaw<sup>2</sup> working in England, obtained nasal washings from influenza patients. After experiments with animals of different species, they discovered that ferrets were susceptible to the virus of influenza. These workers describe the disease as produced in ferrets. They find that the disease is caused by a filtrable virus and that an attack produces active immunity. They refer to Shope's work, having obtained from him

material containing swine influenza virus. They find a relationship between the human virus and that of swine influenza. Ferrets recovered from swine influenza are solidly immune to the human strain; ferrets recovered from human influenza, on the other hand, are not completely immune to the pig strain. These authors conclude: "We are led to the publication of this preliminary note by the hope that our findings may be of assistance to those, wherever they may be situated, whose fate it may be to study the next epidemic of influenza."

### *Swine Influenza in Ferrets*

In a recent article, Shope<sup>3</sup> describes results of further work with ferrets, using swine influenza virus. He discovered by anesthetizing the animals before introducing swine influenza virus, that a much more severe type of disease (with consolidation of entire lobes of one or both lungs) resulted, than that described by Smith, Andrewes and Laidlaw. Shope's procedure was to introduce intranasally one to two cubic centimeters of a five per cent suspension of pathologic lung or lung and bronchial exudate, containing swine influenza virus. He describes the clinical picture in ferrets, with onset following an incubation period of twenty-four to forty-eight hours. The article deals also with the pathology of the disease in ferrets, with the bacteriology, filtration experiments and cross neutralization tests.

### *Human Influenza Virus in Mice*

Francis,<sup>4</sup> in a recent number of the *Journal of the American Medical Association*, presents an interesting summary of studies related to influenza. Using filtrates of sputum obtained from human cases of influenza in Puerto Rico, Francis succeeded in producing experimental disease in mice. The article illustrates and describes gross and microscopic pathologic changes in these animals.

### *Plan for Further Studies*

Dr. Shope,\* while in Des Moines a few weeks ago, conferred with members of the State Department of Health relative to further study of the virus of influenza in man. He desires material

\*Note: Dr. Shope was graduated from the medical school of the University of Iowa. His father, Charles C. Shope, M.D., practiced medicine for many years in Des Moines.

from patients (sputum and throat garglings), obtained during the course of illness. A significant communication from Dr. Shope,<sup>5</sup> dated September 20, 1935, reads in part as follows:

"Experimental data so far at hand, suggest a close relationship between the virus of swine influenza of the middle west and recently isolated strains of virus from cases of human influenza obtained in England, Puerto Rico, Alaska, and here in some of our eastern cities. The swine and human viruses produce the same types of disease pictures in ferrets and in mice and, in addition, ferrets or mice that have survived infection with one virus are immune to the other. Cross-passive protection experiments (virus neutralizations) have revealed that the swine and human viruses, while closely related, are not identical. However, the sera from human beings who had influenza during the 1918 pandemic neutralize the swine influenza virus, though they frequently fail to neutralize the recently isolated human virus strains. This, as well as certain other features of the swine virus, has suggested the interesting possibility that it (the swine influenza virus) may represent the 1918 human pandemic strain which has become established in hogs. I have gotten swine virus from Iowa almost every year since 1928 and all strains studied were immunologically identical: that is, all were of the type that is now neutralized best by 1918 human serum."

It is in the effort to throw further light on certain phases of this vital subject of influenza, that Dr. Shope desires to obtain material from human cases of the disease in Iowa.

*The Reporting of Influenza*

In view of the importance of influenza in its more restricted outbreaks and as a tremendous factor in increasing the mortality rate whenever the disease reaches pandemic form, it is desirable that the reporting of cases from year to year, be more complete. Only in this way are health officials made aware of periods of undue prevalence of this disease. Figures representing the number of cases of influenza reported to the State Department of Health for the five-year period from 1930 to and including 1934, and the first eight months of 1935, are as follows:

Year	Number of Cases
1930 .....	37
1931 .....	3
1932 .....	3,833
1933 .....	1,804
1934 .....	264
1935 (8 months).....	977

The figures for 1932 and 1933 were largely the result of a survey made through the cooperation

of health officers and physicians in a number of the larger cities of the state.

*Request for Collaboration*

The department requests the continued interest of health officers and attending physicians in the reporting of cases of influenza and of other communicable diseases which come under their observation. A letter relative to undue prevalence of influenza in your community will enable the department to notify Dr. Shope, who will be prepared to come to Iowa or arrange with physicians for material with which to continue his studies.

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OCURRENCE OF MALARIA IN IOWA

Cases of malaria doubtless occur more frequently in Iowa than is indicated by official reports to the State Department of Health. Two cases of malaria were reported during 1932, the same number in 1933 and four cases in 1934. That conditions during 1935 have favored the transmission of this disease is indicated by the fact that for the first nine months, twenty-three cases of malaria have been reported. The distribution of these cases by months and by counties is as follows:

Month	Number of Cases	Counties
January .....	None	.....
February .....	None	.....
March .....	None	.....
April .....	None	.....
May .....	None	.....
June .....	2	Decatur, Johnson
July .....	3	Benton, Johnson (2)
August .....	11	Buchanan, Clayton, Clinton (7), Warren, Washington
September .....	7	Des Moines, Jefferson, Story (3), Warren (2)
Total (9 months)....	23	

*Mosquito Survey in Clinton County*

On August 22, 1935, W. H. Presnell, M.D., of Charlotte in Clinton county, reported seven cases of tertian malaria to the State Department of Health. No two of these cases occurred in the same family. There were four boys and a girl, all of the 'teen age. The other two, a man and a woman, were of middle age. All of the patients at the time of illness were living in rural areas, several miles removed and in different directions from Charlotte. Dr. Presnell reported these cases following a successful search for malarial para-

(Continued on page 570)



# The JOURNAL of the Iowa State Medical Society

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## LADIES AND GENTLEMEN—YOUR HEALTH!

For the past twelve years the American Medical Association has actively sponsored radio broadcasts on health topics. In the October issue of *Hygeia* the American Medical Association announces a continuation of its program of radio broadcasts, but indicates that the broadcast will be in a new form. "With the cooperation of the National Broadcasting Company, the health education message will be broadcast during the winter of 1935-1936 in a more graphic and attractive form and, of course, with undiminished authenticity."

In the past radio health programs have been presented either as didactic lectures or as question and answer dialogues. The 1934-1935 radio talks of the Association were presented in dramatic form with appropriate organ music. The newly announced radio programs for 1935-1936 will carry this presentation a step farther by dramatizing medical situations with the aid of a carefully selected dramatic cast, accompanied by sound effect and incidental music. The new presentation will have the same authentic background and guarantee the same scientific educational value, but because of the increased entertainment value, it is believed that a wider audience will be reached. These programs will be broadcast by the National Broadcasting Company over its Blue Network each Tuesday at 4:00 p. m., Central Standard Time, beginning on October 1. The following Iowa stations will carry this program: KSO of Des Moines, and WMT of Waterloo and Cedar Rapids.

We feel that every assistance and encouragement should be given the American Medical Association in this project. We urge every Iowa physician to determine where this program can

best be heard by listeners in his community and through any avenues available to him, disseminate this information. A proper presentation to your local newspaper will likely secure free announcement of the plan. Through the schools or club organizations, announcements may be made, and in your own office the announcement taken from page 902 of the October *Hygeia* may be appropriately displayed.

So much for your part in procuring attention to the program. You should stress the fact that radio stations select their programs because of the manifest interest of the public in the entertainment value of these programs, and this interest is measured by the number and scope of replies received, regarding the program. We urge, therefore, that you use your influence to reflect interest in these programs by requesting interested listeners to write the stations, commending them upon the use of this material. Watch for this program next Tuesday at 4:00 p. m. It will be introduced by the musical announcement, Ladies and Gentlemen—Your Health!

## AN AVERAGE IOWA PHYSICIAN

How do you rank among your professional colleagues? Are you an average Iowa physician? For some reason one rarely feels complimented to be considered an average physician, although we are usually quite satisfied to be classified as an average resident in a community or as an average citizen. Somehow to be designated as "an average physician" seems to connote about the same as "just an average physician." When we consider that the average is determined solely on a basis of many superiors and a like number of inferiors in the group—"a mean proportion composed of unequal sums or quantities"—we must realize that "an average physician" is no mean rating.

In legal terms average skill may be demanded by a patient, but no more, unless the physician purports by his title or other means that he is prepared to give a more superior service. Fitness to render medical care then is reckoned on a basis of "the average physician."

Many standards for judgment must be established before the average physician could be defined. He might be rated as to his medical education, his aptitude in practice, his financial success, his ideals in life, or his standing in his community. Perhaps all of these would require definition for an absolute standard.

In connection with a survey which we recently made among Iowa physicians, certain data were developed which give an interesting insight into some of the qualities of the "average Iowa physician." More than fifty per cent of our members responded to our questionnaire, and your editor takes this opportunity of expressing his appreciation of your interest and cooperation in making this survey a success. The figures are insufficient, even when combined with those available through other sources, to complete the picture, but they do offer at least an interesting silhouette of this average Iowa physician.

He is the son of a minister or farmer, a graduate of an "A" medical school, has had hospital experience, and is now in general practice. He is married and has less than two children (1.42 per cent). He spends \$307.98 annually for clothes (total for family) and is not planning home improvements for this year (39.59 per cent are planning home improvements). He still burns coal (22.44 per cent use oil and 7.16 per cent use gas heat), but has an electric refrigerator (75.42 per cent). His car is of the vintage of 1933 or older (64.15 per cent) and his family must depend on the business car, either a Ford or Chevrolet, for transportation (two car families total 39.16 per cent). While he has not bought a new car, this average Iowa physician has kept up his life insurance and has \$21,260.00 of personal insurance in force (or otherwise reckoned, about \$50,000,000 for all physicians in Iowa). Something should be said of his earnings, but alas, his earnings and his collections are so widely different that it is too uncertain to estimate.

All in all, is it not a mark of distinction to be classed as "An Average Iowa Physician"?

#### THE COUNCIL ON PHYSICAL THERAPY

Time was when the practicing physician required only his pill case, a lancet and a limited amount of surgical dressing in order to practice medicine successfully. If enjoying a rural practice, he might add saddlebags and a soldering iron for cautery. With the development of the newer medicine the physician feels that he must purchase innumerable appliances and gadgets as aids in diagnosis and treatment.

In appreciation of this newer armamentarium and for the protection of its members, the American Medical Association established a Council on Physical Therapy, with members selected from the faculties of many of our leading universities and from the personnel of outstanding medical

clinics. This Council has from time to time published statements in the *Journal of the American Medical Association*, indicating the merits of certain apparatus meeting their requirements. Recently these several reports have been compiled into a small pamphlet published by the Association in May of 1935.<sup>1</sup> This booklet lists all apparatus accepted by the Council on Physical Therapy, together with a description of the accepted apparatus, the indications for the use of each type, and a statement relative to the efficiencies and dangers of the apparatus. This pamphlet is a real contribution on the part of the American Medical Association in behalf of rational therapeutics and will go far to place physical therapy on a sound scientific basis for the benefit of the medical profession.

Within the past thirty days the Council on Physical Therapy has announced a plan for extension education in physical therapy.<sup>2</sup> The committee on education of the Council believes that one of the best ways of extending postgraduate instruction in physical therapy is to arrange for practical talks to be given before state, county or other medical societies. With this in mind the Council is prepared to assist medical societies by furnishing general advice as to programs and by suggesting qualified personnel. The following topics are offered as being of interest to the general practitioner:

#### The Present Status of Physical Therapy

Physical Therapy in General Practice

Body Mechanics and Posture Training

Massage—Indications and Effects

Pathologic Conditions Helped by Physical Therapy

Therapeutic Exercise

Radiation Therapy

Hydrotherapy

Fever Therapy

Diathermy, Medical and Surgical, Including Short Wave

Motion pictures on the following subjects are available for loan:

Massage—Technic

Graduated Active Motion

Occupational Therapy

Effects of Heat and Cold on Blood Circulation

Effects of Massage on Blood Circulation

In addition, exhibits on physical therapy can be arranged in conjunction with the Committee on Scientific Exhibit, available on request.

1. The pamphlet, "Apparatus Accepted," may be obtained free by writing to the Secretary, Council on Physical Therapy, American Medical Association, 535 North Dearborn Street, Chicago, Illinois.

2. Service in extension education in physical therapy may be arranged through the Secretary, Council on Physical Therapy, American Medical Association, 535 North Dearborn Street, Chicago, Illinois.



## Report of Delegates to the American Medical Association

For many reasons your delegates wish that every member of the Iowa State Medical Society might have attended the meeting of the American Medical Association at Atlantic City last June.

It was the first joint meeting of the Canadian-American Medical Association, and as such was unique. Scientific medicine knows no national boundaries. There was a real thrill in seeing the doctors of these two countries absorbed in common interests. As this satisfaction was "stepped up" for us from Iowa by the attendance of Dr. Campbell P. Howard of Montreal, there were doubtless many similar relationships for men of other states and of the provinces.

The officers of the Canadian Medical Society addressed our House of Delegates, and made very real their sincere satisfaction in this joint meeting. The president of the Canadian Medical Society, Dr. J. C. Meakins, told about searching the minute books of the early Canadian societies, and finding extracts of correspondence in 1848, between the Medical Society of Upper Canada, the Medical Society of Lower Canada, and the embryonic organization of the American Medical Association. This correspondence pertained to the possibilities of forming an American Medical Association which would include the organizations of the United States and Canada. This joint meeting of 1935, eighty-seven years later, appears to be the next step. That the next step will not be so far removed from the immediate future is evidenced by the fact that the Canadian Medical Society has invited the American Medical Association to come to Canada for a joint meeting "in the near future," before 1940, at a time to be agreed upon.

The session in Atlantic City saw the close of the presidential term of our own Dr. Walter L. Bierring. It was his official duty to address the House of Delegates. The address was published in the *Journal of the American Medical Association*. If you have not already read it, do so at once, and absorb the comprehensive view of American medicine during the past thirty years and the present day status which he so ably portrays. We were proud to hear it. You will be proud to read it.

The major part of the detailed discussion of business of the House of Delegates is conducted before reference committees. The speaker of the House appointed twelve such committees, and referred all business to them for consideration.

These committees reported back to the House of Delegates, and the House acted upon the reports of the various committees. Since these committees meet simultaneously, no one person can follow all the deliberations in detail. Some of the more significant actions of the House are enumerated:

### MEDICAL EDUCATION

1. The Council on Medical Education and Hospitals was "urged to speed its efforts to meet the need of postgraduate work," and it was suggested that "this could well be done by carrying instruction directly to the practitioners." (We of Iowa believe that this urge and suggestion were well supported by the address of the chairman of the Speakers Bureau of the Iowa State Medical Society, delivered before the conference on Medical Education last February.)

2. The Council was well supported in its survey of all medical schools in North America. This is the major activity of the Council at present. It is a painstaking survey, conducted at considerable expense, and doubtless will be of much value in enforcing desirable standards in medical education.

3. The Council was urged to use its influence to have courses in medical economics introduced into all recognized medical schools.

### HYGIENE AND PUBLIC HEALTH

Protests were authorized to be carried to the Federal Communications Commission, regarding objectionable and misleading radio broadcasts in this country and in adjacent countries.

### INTEGRATION OF THE MEDICAL PROFESSION

Our editor discussed in the September issue of the *JOURNAL* the problem of integration of the medical profession. It was called to the attention of the House by the trustees, because two states had considered such organization. In this plan the state society becomes a guild in which license and society functions are interwoven. The license carries membership. This is the type of organization in Ontario. It was not widely discussed and was referred back to the trustees for further study.

### BIRTH CONTROL

All resolutions pertaining to this were referred to a special reference committee. The committee did not approve any resolution as introduced. It prepared a new resolution and presented it to the

House of Delegates with the statement that nothing in it should be considered as a declaration for or against birth control. The House adopted the resolution which provides for the appointment of a special committee by the Board of Trustees to study "these related problems," and report to the 1936 session.

#### MEDICAL ECONOMICS

As in the past two meetings of the House of Delegates, economic problems were of much general interest. At a special meeting in Chicago in February, 1935, the House had gone on record as being opposed to any form of national or state health insurance, and no change in that attitude was even considered. The Bureau on Medical Economics reported that there are now over two hundred plans in operation at the present time. They had information concerning all these plans, but had no plan to offer as a substitute for the present system of the practice of medicine. However, they would gladly give advice and information to any local society that wanted to set up an organization for the care of those in the lower income and indigent groups.

A resolution was introduced by Dr. Walter F. Donaldson of Pennsylvania urging the Council on Medical Education and Hospitals, and the Bureau of Medical Economics to continue their endeavors until courses in medical economics have been established in all the medical colleges in this country. It was referred to the Committee on Medical Education. The reference committee on Medical Economics recommended that adequate provision be made for the continuance and expansion of the most important work of the Bureau of Medical Economics.

#### LEGISLATIVE ACTIVITIES

Importance was stressed in maintaining contacts with leaders of other groups concerned with legislative affairs. Consideration has been given to the hospitalization benefits to World War veterans without service connected disabilities. The committee reports that "last year there were some 3,000 beds unused in institutions for patients with tuberculosis, and some 6,000 beds in hospitals devoted to general medical and surgical care were not being used. It would seem that the oath (relating to a veteran's financial ability to take care of his own hospital needs), the regulations of the Veterans' Bureau, and the cooperation of the Legion itself, have definitely curtailed the demands for free hospital and medical care by those who are able to pay."

There has been much contact by members of the Committee on Legislative Activities with the

Legion, and with representatives of the rehabilitation service of the federal government.

In connection with legislative functions, an address by the Hon. J. Hamm Lewis, United States senator from Illinois, was of much interest. Senator Lewis' advice to the House of Delegates was a feature of entertainment by the local committee. His theme was peace, and he credited the medical profession with enough legislative influence to insure world peace if they would but use it. This may be a bit extravagant, but it is significant when one of Senator Lewis' experience outlines the tremendous influence which our profession may have in legislation if we will be civilly minded and interested enough to act.

Throughout the whole meeting of the House of Delegates, there persisted a genuine desire that there should be a closer understanding between the House of Delegates and the component county medical societies. Every component society member should feel that his interests are those of the House of Delegates of the American Medical Association, and delegates should do their utmost by collective action to serve the interests of the component society members. To further this purpose, delegates were urged to make complete reports to their state societies.

#### Delegates

Fred Moore, M.D.  
Thomas F. Thornton, M.D.  
Vernon L. Treyner, M.D.

#### PRIZE TO DR. WANGENSTEEN

Dr. Owen H. Wangensteen, of the department of surgery, University of Minnesota, Minneapolis, Minnesota, has been awarded the Samuel D. Gross prize of fifteen hundred dollars, for 1935. His essay was entitled "The Therapeutic Problem in Bowel Obstruction." This prize is awarded every five years, and of special interest this year is the fact that the winner, Dr. Wangensteen, is coming to Iowa on November 20 as one of the speakers on the cancer postgraduate course sponsored by the Speakers Bureau at Newton.

#### MAYO FOUNDATION LECTURES

A special program of lectures and demonstrations in medicine will be held under the direction of The Mayo Foundation from November 11 to 15, inclusive. Mornings will be devoted to surgical and medical clinics. In the afternoons and evenings symposiums will be conducted on gastro-enterology, postoperative chest complications, hematology, diseases of the rectum and anus, treatment of syphilis, some aspects of endocrinology, and physiotherapy, including fever therapy. In addition one clinicopathologic conference will be held.

While this program is arranged primarily for the Fellows of the Foundation, visiting physicians are invited to attend.



# SPEAKERS BUREAU ACTIVITIES

## POSTGRADUATE COURSES

The postgraduate courses being presented this fall are drawing large audiences. There are about one hundred and twenty-five men enrolled at Charles City for the course in general therapeutics, and over one hundred and ten at Davenport for a similar course. The course being conducted by the faculty of the College of Medicine of the State University has attracted about fifty men at Cherokee, and over forty men at Atlantic. The course on cancer being held at Newton is drawing good crowds, and the lectures are excellent. Any doctor in the vicinity of any of these courses who is not attending should make an effort to go to the meetings. The cost is low, and the value received is high.

The dates for the meetings at Cherokee were given in last month's JOURNAL. They remain unchanged. The meetings at Atlantic are held one day earlier than those at Cherokee, on Wednesdays, with the same lectures and faculty. The dates for the other talks are given below.

### Newton

- October 9—N. G. Alcock, M.D., Iowa City
- October 16—Leo G. Rigler, M.D., Minneapolis
- October 23—James H. Mitchell, M.D., Chicago
- October 30—Vernon C. David, M.D., Chicago
- November 6—D. B. Phemister, M.D., Chicago
- November 13—Gordon B. New, M.D., Rochester
- November 20—Owen H. Wangenstein, M.D., Minneapolis

### Davenport

- October 11—Erwin R. Schmidt, M.D., Madison
- October 18—No meeting
- October 25—William P. Murphy, M.D., Boston
- November 1—Bernard Fantus, M.D., Chicago
- November 8—E. E. Irons, M.D., Chicago
- November 15—R. W. Scott, M.D., Cleveland
- November 22—H. L. Beye, M.D., Iowa City

### Charles City

- October 10—Erwin R. Schmidt, M.D., Madison
- October 17—No Meeting
- October 24—William P. Murphy, M.D., Boston
- October 31—Bernard Fantus, M.D., Chicago
- November 7—E. D. Plass, M.D., Iowa City
- November 14—H. E. Michelson, M.D., Minneapolis
- November 21—Mary A. Foley, Rochester

## TALKS TO LAY AUDIENCES

The Speakers Bureau is receiving many requests for talks before lay audiences. Many organizations are most active during the fall and winter months, and plan their programs accordingly. A resumé of talks furnished last year for this period shows that the Speakers Bureau presented sixteen talks before service clubs, one before a Chamber of Commerce, fifteen before Women's Clubs, and twelve before Parent-Teacher Associations. In July a letter was sent to these organizations, offering the services of the Bureau in planning programs, and on October first the following talks had been definitely scheduled: service clubs, thirteen; Chambers of Commerce, four; Women's Clubs, fourteen; and Parent-Teacher Associations, twenty-five.

This shows a marked increase in demands for this service. To furnish speakers for this number of talks, the Bureau has called again upon doctors who have helped with this work in the past, and has tried to utilize many new men. This phase of the work will expand as news of it spreads to other organizations. It will constitute an important part of the educational work of the State Society, and one which will pay large dividends. Splendid reports have been received from organizations receiving the service, and the Bureau feels that the work is appreciated and worthwhile.

## COUNTY EXCHANGE PROGRAMS

A letter was sent to all county medical society secretaries offering the aid of the Speakers Bureau in providing county exchange programs during the winter. Reports from these programs last winter were most favorable, and it was felt that they should be continued. Any county medical society desiring such a program may write the Speakers Bureau, and programs will be arranged.

## RADIO PROGRAMS

WOI—Wednesdays at 4:30 p. m.

WSUI—Mondays at 8:00 p. m.

- October 2—Are Glasses Actually Necessary?  
H. J. McCoy, M.D.
- October 9—The Importance of Early Diagnosis.  
C. R. Watkin, M.D.
- October 16—Common Errors in the Care of Infants.  
Roland Stahr, M.D.
- October 23—X-Ray, the Searchlight of Medicine.  
H. A. Spilman, M.D.
- October 30—Cancer of the Cervix.  
O. A. Elliott, M.D.

# WOMAN'S AUXILIARY NEWS

*Edited by the Press and Publicity Committee*

MRS. DEAN W. HARMAN, *Chairman*, Glenwood, Iowa

## PUBLIC RELATIONS PROGRAM

Every organized auxiliary, regardless of size, is urged to place one speaker from the Speakers Bureau of the Iowa State Medical Society to a lay organization during the year. Under lay organizations we list Parent-Teacher Associations, Rotary Clubs, Farm Bureau Clubs, Women's Clubs, Girl Scouts, Boy Scouts, and Camp Fire groups. There is no charge for this service.

The Public Health Department asks our assistance in promoting vaccination propaganda. May health programs should receive our cooperation. We should urge high school principals to list on their curricula the course necessary to qualify for pre-medic work.

Medicine has made great advances in the last thirty-five years, yet many schools are using hygiene texts printed in the late nineteenth and early twentieth centuries. We might be able to bring about the replacement of this out-dated literature.

The Midwestern Debating League is planning to use as its subject for debate "Socialized Medicine." The Bureau on Medical Economics of the American Medical Association has compiled information and statistics on the subject which auxiliaries can secure and place in every school and public library in the cities where high schools are participating in these debates, thus providing much accurate information.

Notices of national, state, and local medical broadcasts should be posted in public libraries and other public places.

Librarians tell us that the public is so eager for medical information that pages are cut from books to secure it. Each auxiliary could donate to the public library one volume of some recently approved lay medical book for every ten members and also furnish a guide for the purchase of lay medical books.

We can sponsor a guest day for presidents of all women's organizations in the community with a speaker from the state society.

This year we are sponsoring our third health essay contest in our public schools. The subject will be announced next month.

## OFFICERS FOR THE YEAR 1935-1936

President, Mrs. M. C. Hennessy, 118 Fifth Ave., Council Bluffs.

President Elect, Mrs. C. A. Boice, Washington.

First Vice President, Mrs. Harold A. Spilman, Ottumwa.

Second Vice President, Mrs. William R. Hornaday, 3011 High St. Des Moines.

Third Vice President, Mrs. Benjamin J. Walker, Corydon.

Fourth Vice President, Mrs. James W. Graham, Sioux City.

Secretary, Mrs. P. W. Beckman, Perry.

Treasurer, Mrs. Russell C. Doolittle, 28th and Woodland Ave., Des Moines.

Directors, Mrs. J. A. Downing, 1246 46th St., Des Moines; Mrs. J. C. Donahue, Centerville.

Legislative, Mrs. Thomas A. Burcham, 645 44th St., Des Moines.

Educational Program, Mrs. Channing G. Smith, Granger.

Public Relations, Mrs. W. A. Seidler, Jamaica.

Hygeia, Mrs. E. L. Bowers, Guthrie Center.

Revisions, Mrs. J. H. McCall, Allerton.

Parliamentarian, Mrs. A. L. Bryan, Muscatine.

Press and Publicity, Mrs. Dean Harman, Glenwood.

Printing, Mrs. S. D. Maiden, Council Bluffs.

## Woodbury County

The Woman's Auxiliary to the Woodbury County Medical Society held its first meeting of the year at Sergeant Bluff, Wednesday, September 11, at a six-thirty dinner. Guests of the society were Dr. and Mrs. S. D. Maiden, and Dr. and Mrs. M. C. Hennessy of Council Bluffs. Mrs. James Graham, president of the Woodbury Auxiliary, presided and introduced Mrs. Hennessy, who spoke to the doctors and the ladies on the benefit of active organizations.

## Pottawattamie County

Pottawattamie County will hold its first meeting at a tea at the home of Mrs. S. D. Maiden, president of the Auxiliary, honoring Mrs. M. C. Hennessy, state president. Invitations to the members of Mills and Cass County Auxiliaries are being extended.

## Mills County

Mills County Auxiliary was entertained at a one o'clock luncheon Tuesday, September 10, by Mrs. J. M. Donelan and Mrs. G. M. Agan of Glenwood and Mrs. Edgar Christy of Hastings. Officers elected for next year are: Mrs. W. A. DeYoung of Glenwood, president; Mrs. G. M. Agan of Glenwood, vice-president, and Mrs. Thomas Shonka of Malvern, secretary and treasurer.

The State Board of Directors will meet in Des Moines, Thursday, October 10, at 10:30 A. M. at the Fort Des Moines Hotel. Following the meeting, officers, board members, and state committee members will meet for luncheon, after which definite plans for the year's activities will be discussed.



## SOCIETY PROCEEDINGS

### Boone-Story Society

Approximately one hundred Iowa physicians attended the annual Boone-Story Medical Society picnic, held at the Ames Golf and Country Club, Wednesday, September 18. The scientific program was as follows: The Treatment of Fracture of the Larger Joints, Philip H. Kreuscher, M.D., associate professor of surgery, Northwestern University, Chicago; and Fistulae and Hemorrhoids, Newton D. Smith, M.D., of The Mayo Clinic, Rochester.

### Calhoun County

The regular meeting of the Calhoun County Medical Society was held in the courthouse in Rockwell City, Thursday, September 26. Erwin von Graff, M.D., of Des Moines, was guest speaker and presented a very interesting paper on Miscarriages, Diagnosis, Complications and Treatment.

F. W. Hobart, M.D., Secretary.

### Cerro Gordo County

Tuesday, September 10, the regular monthly meeting of the Cerro Gordo County Medical Society was held in Mason City. The establishment of a county tuberculosis society was sanctioned. This society will establish chest clinics in Mason City and the surrounding communities. The speaker of the evening was E. T. Bell, M.D., from the University of Minnesota. His topic was Clinical Diagnosis of Tumors of the Breast.

H. W. Morgan, M.D., Secretary.

### Delaware County

Dr. E. J. Wintenburg of Delhi, president of the Delaware County Medical Society, called a meeting Thursday, September 4, at the Glen-Charles Hotel in Manchester. Following a six-thirty dinner, William M. Spear, M.D., superintendent of the tuberculosis sanatorium at Oakdale, gave a very interesting interpretation of the x-rays taken last spring in connection with the Delaware county tuberculosis project.

C. B. Rogers, M.D., Earlville.

### Johnson County

Members of the Johnson County Medical Society were accorded the privilege of listening to W. Wayne Babcock, M.D., professor of surgery, Temple University, Philadelphia, at the meeting held Saturday, October 5, in Iowa City. Dr. Babcock spoke on Common Errors in Surgical Practice.

Horace M. Korn, M.D., Secretary.

### Linn County

Harold B. Cushing, M.D., of Montreal, Canada, will be guest speaker for the Linn County Medical Society at the meeting to be held in Cedar Rapids,

Wednesday, October 16. Dr. Cushing will speak on The Prevention and Treatment of Scarlet Fever. His address will be discussed by Drs. P. C. Jeans of Iowa City, Charles A. Waterbury of Waterloo, and L. M. Downing of Cedar Rapids. Included on the program will be a paper on Choriocarcinoma, presented by B. J. Moon, M.D., of Cedar Rapids.

T. F. Hersch, M.D., Secretary.

### Marion, Monroe and Lucas Societies

A joint meeting of members of the Marion, Monroe, and Lucas County Medical Societies was held at the Legion Hall in Knoxville, Monday, September 30. After a six-thirty dinner the following program was presented: Tonsillitis, L. M. Downing, M.D., of Cedar Rapids, discussion opened by D. S. Burbank, M.D., of Pleasantville; paper by James B. Robb, M.D., of Chariton, discussion opened by Dwight Jarvis, M.D., of Chariton; Resumé of Lobar Pneumonia and Its Treatment, F. A. Hecker, M.D., of Ottumwa, discussion opened by T. A. Moran, M.D., of Melrose; and X-ray and Radium Treatment of Uterine Hemorrhage, H. H. Webb, M.D., of Ottumwa.

### Wapello County

W. C. Newell, M.D., of Ottumwa, addressed the Wapello County Medical Society at its meeting held in Ottumwa, Tuesday, September 17. Dr. Newell's subject was Diseases of the Liver and Biliary Tract.

### Austin Flint-Cedar Valley Medical Society

The fall meeting of the Austin Flint-Cedar Valley Medical Society was held, by invitation, at The Mayo Clinic in Rochester. Dr. C. F. Dixon was chairman of the arrangements committee, and during the morning we were entertained by operative and medical clinics at St. Mary's Hospital. A luncheon was held at the Kahler Hotel, at which time The Mayo Clinic Staff were hosts to the entire society and their wives. Dr. W. J. McGrath of Elkader, vice president of the organization, presided, and Dr. W. E. Long of Mason City, spoke in behalf of the society. Dr. L. B. Wilson, Director of The Mayo Foundation, presented an address. During the afternoon a clinical pathologic conference was held by the cardiac and genito-urinary sections. Over seventy physicians registered. An enjoyable and profitable day was had by all.

H. W. Rathe, M.D.

### Iowa Academy of Ophthalmology and Otolaryngology

Thursday, November 7, has been selected as the date of the annual meeting of the Iowa Academy of Ophthalmology and Otolaryngology. The sessions will be held in Council Bluffs, and the following program will be presented by men in southwestern Iowa: The Causes of Phorias, F. W. Dean, M.D.,

Council Bluffs; Laryngotracheitis, Jack V. Treynor, M.D., Council Bluffs; Asthmatic Bronchitis, John F. Stageman, M.D., Council Bluffs; Tuberculosis of the Cornea and Iris, W. H. Maloy, M.D., Shenandoah; Serous Meningitis as a Complication of Acute Mastoiditis, E. C. Montgomery, M.D., Atlantic; Head Specialists, L. G. Howard, M.D., Council Bluffs; Intracocular Steel, Abbott M. Dean, M.D., Council Bluffs; and Practical Management of Antrum Infection, S. D. Maiden, M.D., Council Bluffs.

#### Iowa Clinical Surgical Society

Members of the Iowa Clinical Surgical Society convened in regular session at Sioux City, Saturday, September 28. Clinics were held at St. Joseph's Hospital by R. Q. Rowse, M.D., and Prince E. Sawyer, M.D., general surgery; Arch. F. O'Donoghue, M.D., orthopedic surgery; and Lawrence E. Pierson, M.D., urologic surgery. The luncheon and afternoon meetings were held at the Hotel Warrior.

#### PERSONAL MENTION

Dr. Merrill O. Eiel, a graduate of the State University of Iowa College of Medicine in 1927, has entered the practice of medicine in Osage, associating himself with his brother, Dr. John O. Eiel. Dr. Merrill Eiel interned at the St. Francis hospital in La-Crosse, Wisconsin, and has just completed special training at the University of Wisconsin.

Dr. Milford E. Barnes, professor of preventive medicine at the State University of Iowa, addressed the Washington County Teachers Institute on "The Prevention of Contagious and Communicable Diseases" in Washington on September 23.

Dr. Arthur H. Schumacher, roentgenologist and pathologist, has located in Fort Dodge where he will be a member of the staff at St. Joseph's Mercy Hospital. Dr. Schumacher was graduated from the University of Illinois College of Medicine in 1934, and since that time has served as an interne in Cook County Hospital.

Dr. Granville Ryan of Des Moines, recently addressed the Adel Rotary Club on "The Relationship of Physicians and Business Men."

Dr. H. H. Harris, a recent graduate of Loyola University in Chicago, has located in Rockwell City for the practice of medicine. Dr. Harris served his internship in the Evangelical Hospital in Chicago.

Dr. F. L. Knowles of Fort Dodge gave an address in Milwaukee before the Wisconsin Medical Society on September 18. His subject was "Fractures of the Hip."

Dr. E. H. Werling, who was graduated in 1930 from Washington University School of Medicine in St. Louis, has entered the practice of medicine in Boone, where he will be associated with Dr. William Woodburn. Dr. Werling served his internship at Barnes

Hospital, St. Louis, and for the past four years has been resident physician at the Touro infirmary in New Orleans.

Dr. Arthur Steindler of the Children's Hospital at Iowa City, gave an address recently before the American Therapeutical Congress at Kansas City. His subject was "Physical Properties of Bone."

Dr. P. L. Bettler, a graduate of the University of Iowa College of Medicine in 1932, has become associated in the practice of medicine with Dr. Ray J. Harrington of Sioux City. Dr. Bettler served his internship at University Hospitals, and has since been a resident physician there.

Dr. Fred Moore of Des Moines, was the speaker of the evening at a meeting of the Chariton Parent-Teachers Association on September 25. His subject was "Health in School Children."

Dr. William F. Mengert, associate professor of obstetrics and gynecology at the College of Medicine, State University of Iowa, was given an award by the Central Association of Obstetricians and Gynecologists for the best research paper by one of its members during the last year. The title of the winning essay was, "Mechanics of Uterine Support and Position."

Dr. Maxwell T. Wainwright has located for the practice of medicine in Mapleton. Dr. Wainwright was graduated from the University of Nebraska College of Medicine in Omaha in 1934, and spent a year as resident physician and surgeon in the Northwestern Hospital in Minneapolis.

Dr. Albert V. Hardy, formerly of Iowa City, has moved to Baltimore, Maryland, where he has accepted a position as associate professor at Johns Hopkins University.

Dr. J. Fred Clarke of Fairfield spoke to the members of the Public Welfare Department of the Fairfield Woman's Club on September 18. His subject was "Hay Fever and Allied Allergies."

Dr. L. C. Garling has purchased the practice of the late Dr. H. M. Bradley of Manchester. For the past two months, Dr. Garling has been assistant to Dr. M. W. Moulton in his hospital at Bellevue.

Dr. Robert E. Britt who has been practicing medicine in Burlington for the past fifteen months, has accepted a position as instructor in the department of neuropsychiatry at St. Louis University School of Medicine, St. Louis, Missouri.

Dr. Erich Lindemann of the Psychopathic Hospital at Iowa City has been awarded a twelve months' fellowship by the Rockefeller Foundation to do research work at Harvard University in neurophysiology and



endocrinology. Dr. Lindemann has been granted a year's leave of absence by the University of Iowa.

**Dr. D. J. Townsend**, who has practiced in Lohrville for fifty-four years, has gone to Chicago where he will make his home with his daughter.

**Dr. Everett D. Plass** of Iowa City, addressed the Mahoning County Medical Society at Youngstown, Ohio, Tuesday, September 17, on "Simplification of Obstetrical Care."

**Dr. Dean M. Lierle** of Iowa City recently presented a paper on arthritis at a meeting of the American Academy of Otolaryngology and Ophthalmology held in Cincinnati, Ohio, September 16 to 21.

**Dr. Gail McClure** who has been engaged in the practice of medicine at Bussey, has accepted a position in the health service department of Kansas State University at Lawrence.

**Dr. Matthew Sanders**, who was graduated in 1933 from Loyola University in Chicago, has entered the practice of medicine in Fort Dodge. Dr. Sanders served his internships at Michael Reese Hospital in Chicago and the Harper Hospital in Detroit.

#### MARRIAGES

The marriage of Miss Dorothy Thompson and Dr. John F. Hardin of Bedford took place at Westminster Presbyterian Church in St. Joseph, Missouri, Monday, September 9. Following a motor trip, Dr. and Mrs. Hardin will be at home in Bedford, where the groom is engaged in the practice of medicine.

Miss Elmer L. Newell and Dr. Glenn P. Speidel were married Wednesday, September 4, at St. Vincent's Church in New York City. Dr. Speidel is a member of the staff of the State Sanatorium at Oakdale, and they will make their home in Iowa City.

Miss Ruth Roberta Hutchinson and Dr. Henry G. Decker of Des Moines were married at the home of Dr. and Mrs. P. O. Dorweiler in West Bend, Tuesday, August 27. They immediately left for Boston, where Dr. Decker is taking a postgraduate course in neurosurgery at the Lahey Clinic.

#### DEATH NOTICES

**Alt, Roy Colony**, of Cedar Rapids, aged forty-eight, died September 11, following an illness of several months' duration. He was graduated in 1913 from Jefferson Medical College of Philadelphia, and at the time of his death was a member of the Linn County Medical Society.

**Buxton, Otho Christian, Sr.**, of Webster City, aged seventy-eight, died September 17, following a short

illness of heart disease. He was graduated in 1888 from King Eclectic Medical College in Des Moines, and at the time of his death was a member of the Hamilton County Medical Society.

**Graham, Dell Ewing**, of Ottumwa, aged fifty-eight, died September 22, following an extended illness. He was graduated in 1902 from the State University of Iowa, College of Medicine, and at the time of his death was a member of the Wapello County Medical Society.

**Jackson, Taylor Rice**, of Chariton, aged sixty-five, died September 12, following a short illness. He was graduated in 1897 from the University of Illinois College of Medicine in Chicago, and at the time of his death was a member of the Lucas County Medical Society.

**Osborn, William Shelton**, of Osage, aged fifty-seven, died suddenly September 4. He was graduated in 1904 from the University of Illinois College of Medicine in Chicago, and at the time of his death was a member of the Mitchell County Medical Society.

**Stevenson, William**, of Des Moines, aged seventy-seven, died September 15, of pernicious anemia. He was graduated in 1894 from Drake University College of Medicine in Des Moines, and at the time of his death, was a life member of the Polk County and Iowa State Medical Societies.

#### NEW BOOK ON TUBERCULOSIS

Dr. Fred H. Heise, medical director of Trudeau Sanatorium, has compiled a valuable collection called "1,000 Questions and Answers on Tuberculosis," from questions asked during the last ten years by tuberculosis patients in the Question Box department of the Journal of the Outdoor Life. Copies can be obtained for seventy-five cents from the Journal of the Outdoor Life, 50 West Fiftieth Street, New York City.

#### EIGHTH ANNUAL GRADUATE FORTNIGHT, NEW YORK ACADEMY OF MEDICINE

The Eighth Annual Graduate Fortnight of the New York Academy of Medicine will be held from October 21 to November 2, and will be devoted to a consideration of Diseases of the Respiratory Tract. Eighteen important hospitals of the city will present coordinated afternoon clinics and clinical demonstrations. At the evening meetings, prominent clinicians from various parts of the country who are recognized authorities in their special lines of work will discuss various aspects of the general subject. A complete program and registration blank may be obtained by addressing Dr. Frederick P. Reynolds, The New York Academy of Medicine, 2 East 103d Street, New York City.

# HISTORY OF MEDICINE IN IOWA

*Edited by the Historical Committee*

DR. FRANK M. FULLER, Keokuk

DR. JOHN T. McCLINTOCK, Iowa City

DR. PAUL W. VAN METRE, Rockwell City

DR. TOM B. THROCKMORTON, Des Moines

DR. WALTER L. BIERRING, Des Moines

DR. WILLIAM JEPSON, Sioux City

## A History of Medicine in Jefferson County, Iowa

JAMES FREDERIC CLARKE, M.D., F.A.C.S., Fairfield

(Continued from last month)

78. Hayden, John W.: (1866-1909). Born in Ohio in 1839. In 1842 his father, a minister, brought him to Jefferson County, where he lived until his death in 1909. He was educated in the Iowa Wesleyan College in Mount Pleasant and graduated in medicine at Keokuk in 1866, then the Iowa State University School of Medicine. In the war of the rebellion John Hayden enlisted as a private in Company F, third Iowa Cavalry. He served three years as a hospital steward. In 1891 ill health compelled him to retire from active practice and he moved to Fairfield, only to be called again and again to his old patients. Dr. Hayden represented Jefferson County in the Eighteenth General Assembly. He was a brave soldier, a skilled physician and a successful business man, leaving a considerable estate (a rare thing among physicians). Dr. Hayden had a large practice and he was kind and generous to his patients and renters to a fault. As an illustration of the customs of his day and his own great hearted generosity, he advised the writer, just starting in practice: "Don't wrap up your tablets in a paper and charge fifteen cents. Put them in a neat box and charge twenty-five cents. People will pay that just as readily." This trifling charge for medicine throws light on the customs of that day. The writer knew Dr. Hayden well and had for him the highest respect. He was an "old school family doctor." He hated abortionists and all dishonorable members of the profession. He was one of the noble citizens of Jefferson County.

79. Hayden, Thomas: (1874-76). A brother of Dr. John W. Hayden. Born in Iowa, 1854. Graduated from the College of Physicians and Surgeons, Keokuk, Iowa, in 1874. Practiced two years in Libertyville, associated with his brother. He then went to the "New York Institute of Advanced Surgery," 1876-77; then to Nebraska; and then to Fresno, California, where he died in 1931.

80. Henderson, E.: No data. Practiced at Batavia.

81. Henry, Charles: (1931 to this date). Graduated in medicine at State University of Iowa, 1886. Practiced fifteen years in Nebraska. During World War practiced in Hedrick, Iowa; then Alhambra, California. Came to Pleasant Plain in 1931, and is still practicing there.

82. Hite, A. K.: (1874?). No data. Lived on a farm and practiced at Baker Post Office about 1874.

83. Hobson, W. Zeno: (1870-85?). Practiced medicine while living on a farm and later in Pleasant Plain. Was also a minister of the Friends Church.

As was the custom among the Friends, he was called "Zeno" by everyone. He rode horseback and carried saddlebags. Moved to the state of Washington and died there. Dr. Shaffer, in his diary, mentions a Dr. Hobson in 1855, possibly the same man.

84. Hoopman, Aldus Arthur: (1893?). No data. Practiced medicine in Fairfield in 1893. Purchased the practice of Dr. Worthington. Was here but a short time and is now living in Seattle, Washington, but does not answer inquiries. Dr. Hoopman's "purchase" of Dr. Worthington's practice was a sad disappointment—an illustration of the fact that a doctor cannot "sell" his practice.

85. Hoskins, Mrs. Olivia Carrell: (1898 to this date). Born in New York in 1878. Graduated from the Cleveland College of Medicine and Surgery in 1895. Practiced in Pleasant Plain. Dr. Olivia Carrell married Mr. Hoskins and now lives on a farm near Pleasant Plain and continues the practice of medicine.

86. Huey, John T.: (1848?-1866). Practiced in Fairfield in 1848, or earlier. Little can be learned of his life. Judge Leggett said: "He was the most cultured gentleman of my acquaintance." When Dr. J. M. Shaffer came to Fairfield in 1852, he formed a partnership with his brother-in-law, Dr. Huey. Dr. Huey built the most pretentious house in Fairfield, which has just been razed (in 1933). Had everything the best; fine horses and servants, etc. Had a Philadelphia education and wealth, and was the most patrician doctor who has lived in Jefferson County. He was very firm and called every woman "Madam." Dr. Huey did no manual labor, but one day he took the house scissors and cut all the blossoms from the potato plants grown by Mr. Christian Shafer, in his garden. Dr. Huey probably meant to test whether this would lessen or increase the number of potatoes. The writer is today unable to find anyone who knows the effect of cutting off potato blossoms. Dr. Huey is believed to have died of tuberculosis in Fairfield in 1866.

87. Huffman, George F.: (1910). Practiced in Round Prairie Township in 1910. Was born in 1875. Graduated from Drake University Medical College in 1900. Moved to Florence, Arizona, but does not answer inquiries.

88. Hufford, Rollin Hughes: (1864-1894). Born in Pennsylvania, 1823. "Graduate (?) of Jefferson College, Pennsylvania." Was in active practice in 1865. Later he became a druggist in Fairfield and was here about 1880, a partner of Dr. A. C. D. Brad-



shaw. "Attended Sterling Medical College, Columbus, Ohio," but did not graduate. Came to Fairfield in 1864. Died here September 16, 1894.

89. Hull, John C.: (1859-1863). Born in Ohio in 1827. Graduated from the Cincinnati Eclectic Institute in 1853. Practiced in Fairfield, associated with Dr. Charles S. Clarke (?). In 1875 he moved to Kearney, Nebraska, where he died in 1900.

90. Humphrey: (?). No data. Mentioned by Dr. Shaffer in his diary.

91. Hunter, Mary Gill: (1897). A homeopath, practiced in Pleasant Plain. Born in 1854, in Ohio. Graduated from the College of Physicians and Surgeons, Illinois, in 1899. Attended the Ohio University in 1881. Moved to Grand Junction, Colorado. Later graduated in osteopathy.

92. Hurst, L. F.: (1866-1871?). No data. Mentioned by Dr. Shaffer in his diary, 1866-71.

93. James, Lora Douglas: (1908 to this date). Born in Appanoose County, Iowa, in 1882. Graduated from Northwestern University Medical College in 1906. Was an interne in the Polyclinic Hospital in Chicago one and one-half years. Located in Fairfield in 1908. Served as captain and major in the Medical Corps throughout the World War in France. Was with Hospital Unit R and on detached service in the Rainbow Division, being surgeon of the 166th Infantry and the 167th Infantry, and in Evacuation Hospital No. 7 from July to November, 1918. Since Dr. James' discharge he has been commanding officer of the Medical Detachment of the 133rd Regiment of the Iowa National Guard. Is a member of the national, state and district medical societies, the Iowa Clinical Surgical Society and of the Military Surgeons' Association. Was president of the Des Moines Valley Medical Association. Is surgeon of the C. B. & Q. and the C. R. I. & P. Railways. Was responsible for the founding of the county hospital at the date it was established. His encouragement kept the committee at work on the project. Always alive to the betterment of the local profession, Dr. James, more than any other doctor in the county, has kept the medical society alive and active. Dr. James' hobby is military medicine and he takes a prominent place in the Iowa National Guard. Makes friends easily, is true to his friends, and has a wide acquaintance in the profession of Iowa.

94. Jay, R. L.: (1872?). Born in Iowa, 1849. Read medicine with Dr. Payne, Richland, Iowa, 1868. Graduated Keokuk, 1869. Practiced at Merrimac. Drummer boy Company D, Fifteenth Iowa Infantry. Died in Wayland, Iowa, 1891.

95. Jones, T. F.: (1881-1910). Born in Iowa in 1853. Graduated at Keokuk Medical College in 1881. Practiced in Abingdon in 1881 and moved to Fairfield in 1888. In 1902 moved to Boulder, Colorado. One patient said of him in 1893: "He was a splendid doctor, always kind and courteous, liked by everyone." He drove a pair of gray ponies. He always answered calls promptly. Still living in Boulder, Colorado, in the drug business, and still practicing medicine (in 1934).

96. Jones, Hiram: No data. Practiced in Abingdon and moved to Kansas.

97. Jones, Wiley: (1865-66 and 1872-75). Born in Indiana in 1840. Came to Jefferson County with his parents in 1845. Read medicine with Dr. N. Steele, in Fairfield, 1864. Graduated in medicine in Ann Arbor, Michigan, in 1867. Practiced in Glasgow, 1865 to 1866, and went to Winchester. He returned to Fairfield in 1872 and remained here until 1875, when he returned to Van Buren County, at Cantril, where he died in 1920.

98. Keck, Mrs.: (1875?). Practiced medicine in Fairfield about 1875. Her husband, Mr. Keck, had a foundry. Few data obtainable. The writer remembers, as a boy, the sensation in Fairfield, when Dr.

Keck appeared in bloomers—a fashion of that day. She and her husband finally collected herbs, made and bottled a "Catarrh Cure," which she sold widely. Finally she abandoned a general practice and devoted herself to the "Catarrh Cure." She went from house to house selling her remedy. She moved to a larger place and rumor says "became wealthy."

99. King, David Hendricks: (1898 to this date). Born in Walcott, Indiana, 1875, and came to Jefferson County when eleven years of age. Graduated from the Keokuk Medical College in 1898, and located in Abingdon. In 1907 he moved to Batavia and has since practiced there. Dr. King furnished a Memorial Reception Room in the Henry County Hospital at Mt. Pleasant. He has done other good deeds which modesty prevents him from telling to this historian.

100. King, Joel Elijah: (1865-90). Born in Massachusetts, 1813, one of a family of twelve children. His grandfather was a native of Ireland. His father and one brother were physicians. His father was of the regular school. Joel King was at first a minister, he became an "Exhorter," and finally a "Circuit Rider." He read his father's medical books from his "teens" on. His mother kept in the house a box of dried herbs. "In those days every housewife was supposed to know how to relieve pain and allay fever." He enlisted in Company F, Twentieth Illinois Infantry. Later served as a hospital steward. In 1862 he had charge of a smallpox hospital at Louisville, Kentucky. Was discharged for disability in 1862. Studied homeopathy with Dr. Hemmel and then practiced homeopathy. After the war Dr. King started from Illinois for Winterset, Iowa. In February, 1865, he stopped for the night at the John DuBois home, near Fairfield. On Mr. DuBois' suggestion, he came to Fairfield, located, and practiced until his death, in 1890. Dr. King was probably the first homeopath in Jefferson County. He was one of the leading doctors of his time and it seems to the writer that he did much toward leading all doctors away from over medication. In his practice he did not charge "working girls" for his services. He is referred to in the foregoing county history.

101. Kirby, James Arthur: (1887-1890). Born in Illinois in 1858, moved to Jefferson County in 1869. Attended the country schools, where he was a leader in debate. Taught school in the country several years, spending his vacations studying medicine with Dr. Worthington, at Fairfield. He graduated from the College of Medicine, University of Iowa, in 1887, and began practice in Batavia. He was a student of great promise and quite successful. He died of pneumonia in January, 1890. His untimely death was a loss to the profession.

102. Kirkpatrick, J. W.: No data. He practiced at the Baker Post Office. He was not a graduate in medicine.

103. Labagh, N. W.: (1904). He practiced eighteen months at Pleasant Plain. He graduated from the Keokuk College in 1904, and after his residence in Pleasant Plain, moved to Mystic, Iowa, where he is now in practice. During the World War Dr. Labagh served as a medical officer in the Fort Riley training camp.

104. Lamb, L.: (1910). No data. Practiced medicine in Polk Township in 1910.

105. Leshner, H. B.: His medical education consisted of two months at a medical school at Keokuk, Iowa. Not a graduate. He served in the army in the Civil War, probably as a hospital steward. Dr. Leshner was one of the most picturesque doctors who have lived in Jefferson County. With a meager education, he had acquired a large medical vocabulary. His conversation was greatly enjoyed by his medical colleagues and many of the anecdotes related in the preceding history are authentic tales of

his practice. He was a distinct type of the old school doctor, licensed to practice without a diploma before regulating laws were in force. A most likable man with many friends. He did not try "phlebotomy" in one case because he had used "the last he had a week before," and he had the only case known who died from "Peyer's patches on the diaphragm."

106. Leshure, H.: (1889). No data. Practiced medicine in Salina, 1889.

107. Lewis, C. G.: (1859-1866). Born in Ohio, 1832. Moved to Libertyville, 1846. Studied medicine with Dr. Walker, of Libertyville. Graduated at Keokuk Medical College, 1859. Assistant Surgeon Thirtieth Iowa Infantry in Civil War. Resigned because of disability. Practiced in Libertyville until 1866, when he moved to Ottumwa, where he died in 1900.

108. Lewis: (?). No data. Early. Lived two miles northeast of Abingdon.

109. Loer, Thomas R.: (1896). Born in 1869. Graduated from College of Physicians and Surgeons, Keokuk, 1896. Began practice in Lockridge. Moved to Seattle, Washington, and was licensed to practice there in 1908. No other data.

110. Long, C. S.: (1906). Practiced medicine in Fairfield. Moved to Denver, Colorado. No data.

111. Lowell, James.: No data.

112. Machesney, W. T.: (1875?-83). Read medicine in Illinois. Graduated from the Keokuk Medical College about 1875. Began practice in Salina, moved to Perlee and then to Bagley, Iowa, in 1883. Was highly respected in the county.

113. Martin, G. P.: (1888-94). Practiced in Fairfield, 1888 to 1894. Was also a Baptist minister. Told the writer he "healed both the body and the soul as did The Master." Few data can be found. Dr. Martin was an old man when he came to Fairfield. He had been a great traveler, having been three times around the world, at one time preaching and practicing medicine in the island of Madagascar. Died in 1900.

114. Mathews: (1889). Dr. Mathews was in Fairfield in 1889 for a short time. No data.

115. McConnell, Townsend: (1855). Practiced hydrotherapy in a way not liked by the regular profession. Was mentioned in Dr. Shaffer's diary in 1855, but not with respect. Died in Fairfield.

116. McGuire, Roy Alvin: (1908 to this date). Born in Jefferson County in 1880. Graduated from the College of Medicine, University of Iowa, 1908. Practiced in Brighton, Iowa (on the edge of Jefferson County) until 1925 when he moved to Fairfield. A well educated and most active man, he had in both towns an extensive practice. A continuous student, he held an advanced position. In Brighton he served as mayor and as president of the school board. Before going to the war front Dr. McGuire was commissioned captain and examined all the men for enlistment in Hospital Unit R. He went to France with Unit R (after preliminary training at Fort Riley, Kansas) and served in Base Hospital No. 32 in Contrexeville, France, and in Hospital No. 5 in Paris, altogether sixteen months. He was commissioned a major near the end of his service. He was devoted to his work in the army and gave himself without stint to his tasks. An active member of the Fairfield School Board and Commander of the local American Legion, Dr. McGuire is always active in public affairs. His fad is the local ownership of public utilities and the correction of the abuses of public utility companies.

117. McLain, N. E.: No data, practiced in Fairfield in 1906.

118. Meacham, Edwin: No data. Practiced in Abingdon very early.

(To be continued)

## OCURRENCE OF MALARIA IN IOWA

(Continued from page 558)

sites in his own laboratory. Before establishing practice in Charlotte, Dr. Presnell spent several years in hospital and laboratory work at the Gorgas Hospital in Panama.

On September 11, a mosquito survey was made in the vicinity of Charlotte. Dr. Presnell served as guide and the search for mosquito larvae was pursued under the direction of Dr. L. O. Nolf, parasitologist, Department of Zoology, of the University of Iowa. Equipped with an ordinary porcelain-lined dipper, a plain glass tube and some little bottles, Dr. Nolf dipped up water from quiet, clear pools in the low lying marshy area near Goose Lake. Within a short period, he was successful in transferring many anopheline larvae as well as culicine larvae and egg-rafts of the latter, to various specimen bottles. In a letter dated September 24, Dr. Nolf reported that all of the anopheline larvae turned out to be *Anopheles punctipennis*. In view of the fact that larvae of other species of anopheline mosquitoes were absent in the material gathered, it would appear that *Anopheles punctipennis* was the specie responsible for the unusual outbreak of malaria in Clinton county.

## ADDITIONAL CASES OF ROCKY MOUNTAIN SPOTTED FEVER

Two more cases of Rocky Mountain spotted fever were reported to the department during the month of September. These cases occurring in Lee and Linn counties, are of unusual interest in that no reports of cases were received throughout the month of August. An earlier case had been reported from Lee county in July and a fatal case from Linn county in June. Six cases of spotted fever have been reported thus far in 1935, all in the southern half of the state.

### PREVALENCE OF DISEASE

	Aug. '35	July '35	Aug. '34	Most Cases Reported From
Diphtheria .....	17	25	13	Black Hawk, Clayton, Des Moines
Scarlet Fever .....	68	94	46	Polk, Story
Typhoid Fever .....	24	7	68	Madison
Smallpox .....	10	26	1	Lee, Page
Measles .....	15	68	33	Woodbury
Whooping Cough ....	59	89	88	Woodbury, Marshall
Cerebrospinal				
Meningitis .....	8	10	3	Polk, Woodbury
Chickenpox .....	2	56	3	Black Hawk, Dubuque
Mumps .....	53	110	24	Black Hawk, Dubuque
Poliomyelitis .....	13	1	7	Dallas, Polk
Tuberculosis .....	62	26	73	(For State)
Rocky Mountain				
Spotted Fever .....	0	3	2	(For State)
Undulant Fever .....	13	13	43	(For State)
Syphilis .....	105	110	156	(For State)
Gonorrhea .....	176	175	199	(For State)



# THE JOURNAL BOOK SHELF

## BOOKS RECEIVED

**THE AMERICAN ILLUSTRATED MEDICAL DICTIONARY**—By W. A. Newman Dorland, M.D., Seventeenth edition, revised and enlarged. Octavo of 1573 pages with 945 illustrations. W. B. Saunders Company, Philadelphia and London, 1935. Price, \$7.50.

**ANNUAL REPRINTS OF THE REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR 1934**, with the comments that have appeared in *The Journal*. Press of the American Medical Association, Chicago, 1935. Price, \$1.00.

**ARTHRITIS AND RHEUMATOID CONDITIONS**—Ralph Pemberton, M.D., professor of medicine, Graduate School of Medicine, University of Pennsylvania. Second edition, thoroughly revised. Illustrated with 69 engravings. Lea & Febiger, Philadelphia, 1935. Price, \$5.00.

**THE AUTONOMIC DISEASES OR THE RHEUMATIC SYNDROME**—By T. M. Rivers, M.D. Dorrance & Company, Philadelphia. Price, \$3.00.

**CLINICAL LABORATORY METHODS AND DIAGNOSIS**—By R. B. H. Gradwohl, M.D., director of laboratories, St. Louis County Hospital. With 328 illustrations and 24 color plates. C. V. Mosby Company, St. Louis, 1935. Price, \$8.50.

**CLINICAL MANAGEMENT OF SYPHILIS**—By Alvin Russell Harnes, M.D., chief of Congenital Luetic Clinic, New York Hospital. The Macmillan Company, New York, 1935. Price, \$1.50.

**THE CRIPPLED AND THE DISABLED**—By Henry H. Kessler, M.D., Newark, New Jersey. Columbia University Press, 2960 Broadway, New York City, 1935. Price, \$4.00.

**DISEASES OF THE NERVOUS SYSTEM**—By Smith Ely Jelliffe, M.D., formerly professor of psychiatry, Fordham University, New York; and William A. White, M.D., superintendent, St. Elizabeth's Hospital, Washington, D. C. Sixth edition, 1175 pages, illustrated with 497 engravings. Lea & Febiger, Philadelphia, 1935. Price, \$9.50.

**DISEASES OF THE SKIN**—By Richard L. Sutton, M.D., professor of dermatology, University of Kansas; and Richard L. Sutton, Jr., M.D., assistant in dermatology, University of Kansas. Ninth edition, revised and enlarged, with 1310 illustrations and eleven colored plates. C. V. Mosby Company, St. Louis, 1935. Price, \$12.50.

**THE DOCTOR AND THE PUBLIC**—By James Peter Warbasse, M.D., Brooklyn, New York. Paul B. Hoeber, New York, 1935. Price, \$5.00.

**ELECTROTHERAPY AND LIGHT THERAPY**—By Richard Kovacs, M.D., clinical professor and director of physical therapy, Polyclinic Medical School and Hospital, New York. Second edition, enlarged and thoroughly revised. Octavo of 696 pages, illustrated with 263 engravings. Lea & Febiger, Philadelphia, 1935. Price, \$7.50.

**EMOTIONS AND BODILY CHANGES**—By H. Flanders Dunbar, M.D., Ph.D., departments of medicine and psychiatry, Columbia University, Columbia University Press, New York, 1935. Price, \$5.00.

**INTERNATIONAL CLINICS**—Edited by Louis Hamman, M.D., Johns Hopkins Hospital, Baltimore. Volume II, Forty-fifth Series. J. B. Lippincott Company, Philadelphia and London, 1935.

**INTERNATIONAL MEDICAL ANNUAL**—A Year Book of Treatment and Practitioner's Index. Edited by H. Letheby Tidy, M.D., and A. Rendle Short, M.D. William Wood and Company, Baltimore, 1935. Price, \$6.00.

## BOOK REVIEWS

### THE NERVOUS PATIENT

By Charles Phillips Emerson, M.D., research professor of medicine, Indiana University, Indianapolis. J. B. Lippincott Company, Philadelphia and London, 1935. Price \$4.00.

Throughout all time the physician has been consulted more frequently for functional or nervous disorders than for organic ailments. In spite of this fact, even modern medical education offers but little insight into many of these minor disturbances. The young physician may be well prepared to take care of typhoid fever, pneumonia, or gastric ulcer, but finds himself hopelessly inadequate in treating "the patient who, weakened by latent unrecognized organic disease, tires too easily and refuses to reconcile himself to his inefficiency", or one that complains that he is just plain "nervous. Realizing these difficulties, the author of this well written volume discusses the various symptoms and signs presented by the nervous patient, the differential diagnosis, and finally the correct approach to the effective treatment of these patients.

The first half of the book discusses in a terse but entirely satisfactory manner the various pathologic conditions readily accepted as disease entities, indicating their signs, symptoms, and diagnosis, and pointing out many of the confusing complaints of the neurasthenic or the psychasthenic patient, which must be reckoned with in the differential diagnosis.

The second half of the book deals largely with the definite neurasthenic and psychasthenic patient and those suffering from hysteria, epilepsy or psychoses.

It is a pleasure, indeed, to commend this carefully prepared, well written and thoroughly useful volume to every practitioner of medicine, since all physicians must deal with the nervous patient.

### OBSERVATIONS OF A GENERAL PRACTITIONER

By William N. Macartney, M.D., Richard G. Badger, Publisher, The Gorham Press, 100 Charles Street, Boston, Massachusetts.

From the volume, the reviewer imagines the author to be a genial old man, a philosopher, student, and high type family physician, who has practiced in the north, near the Canadian border, and in Florida. He has been industrious, kept records, and has studied his records to the utmost—and finally after fifty years, has rounded out his rich experience in one volume of advice, experience, and witticism. The examples given are rare bits of philosophy, and subtle humor which make the book enjoyable and interesting.

The author has kept abreast of the times, and shows his familiarity of recent discoveries and drugs. From his rich experience he advises the young practitioner on choosing a location, on beginning practice, and how to act in court. His advice on handling "dead beats" is timely. There are numerous prac-

tical examples—such as, how to keep cocaine from decomposing; how to keep silver nitrate, etc. The author strongly stresses the use of iodides, and has had excellent results in lumbago with them. He asserts that there is no such thing as too big a dose of castor oil, and remembers when the dose of calomel was one dram. He purges freely, and sweats often. He is prone to use Marsden's paste in skin cancers. His illustrative infant feeding, with a mason jar and syphon, using cream, milk, lime water, and any given amount of sugar is unique. He mentions "this glorious land of ours which was discovered by a Dago, is owned by the Jews, is run by the Irish, and censored by the American Medical Association, is littered with placards and deluged with advertisements of infant foods. We hope the vast interstellar spaces escape."

The volume is packed full of tritisms and the work represents a full life of study amongst a small group of people. It is interesting, amusing, and educational, and packs a punch as well as a smile. It is worth any physician's time to read it. It is the type of book the reviewer would like to write if he could live as long, and as full a life as Dr. Macartney.

D. M. B.

#### THE STORY OF MEDICINE IN THE MIDDLE AGES

By David Riesman, M.D., Sc.D., professor of the history of medicine, and professor emeritus of clinical medicine, University of Pennsylvania. Illustrated. Paul B. Hoeber, New York City, 1935. Price, \$5.00.

Many histories of medicine have been written. Of these, some are highly authoritative and accurate, presenting carefully prepared data. Others present the chronology of medical advancement with due recognition to development and discovery. Still others present a fascinating panorama of medical evolution which captivates the reader's attention and imagination. Rare, indeed, is that history which combines these several qualities. In the *Story of Medicine in the Middle Ages*, Dr. Riesman intrigues his readers in the unfolding of that fascinating chapter of medical history which might be described as the beginning of modern medicine, and at the same time forcibly impresses his readers with the accuracy of his observations and the thoroughness of his research into the records of that time. He begins his discussion with the inheritance of Greek medicine as preserved in monastic institutions and carries it through the rise of the universities into the period of discovery through dissection and the advances in surgery, concluding his treatise with observations on medical literature of the time, of the medieval hospital and the lay attitude toward the medical profession in the Middle Ages.

"In our pride over the achievement of our own age, we are apt to undervalue or despise the past, not realizing that we can see farther because we are

standing on the shoulders of our ancestors", and so in the author's words we have full justification for the preparation of this delightful historical work which will be enjoyed and appreciated by every cultured physician and surgeon.

#### NAMES OF SURGICAL OPERATIONS

Compiled and arranged by the Western Surgical Association. Edited by Carl E. Black, M.D., Jacksonville, Illinois. Bruce Publishing Company, 2642 University Avenue, Saint Paul, Minnesota. Price, \$3.00.

Very few physicians realize that with the phenomenal growth of surgery in recent times over three thousand names of surgical operations, surgical methods and procedures have crept into our literature. Many of these names are overlapping or identical in their connotations, and many more were entirely non-descriptive. To standardize surgical nomenclature and bring surgical statistics into useful form a special committee of the Western Surgical Society compiled and presented this work.

They have reduced the formidable list of terms to a suggested list of about eight hundred useful descriptive terms. Medical lexicographers, hospital historians, medical students and most surgeons will welcome this useful list. A few prompted by personal vanity may criticize the committee for the omission of personal names formerly associated with certain operations. The unprejudiced, however, will favor the more descriptive anatomic terms suggested.

#### THE PRINCIPLES AND PRACTICE OF UROLOGY

By Frank Hinman, M.D., Clinical professor of urology, University of California Medical School. 1111 pages with 513 illustrations. W. B. Saunders Company, Philadelphia and London, 1935. Price, \$10.00.

The author in this volume has endeavored to present in an understandable way, facts that should interest all members of the profession engaged in the practice of urology. A considerable number of pages are given over to the study of comparative embryology of the genito-urinary tract, which in the reviewer's opinion, is rather unnecessary; however, it is exceedingly interesting. The chapter on hydro-nephrosis is outstanding and exemplifies the painstaking effort of the author. His discussion of this subject is easily the most complete and satisfactory which has come to our attention. The anatomic diagrams presented are exceptionally illustrative, and clear. The large number of other illustrations, dealing both with treatment and diagnosis, are also well presented. The author presents both sides of controversial questions.

This volume can be highly recommended to both specialist and general practitioner, and should receive an enthusiastic reception.

A. G. F.



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### INJURIES OF THE EYE\*

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The majority of injuries to the eye come to the attention of the man in general practice before they do to the oculist. In many instances, ordinary medical horse-sense suffices, but in some cases, the general practitioner is no more mentally or physically equipped to care for such eyes properly than is the oculist equipped to care for systemic disease. It may not be amiss, therefore, to talk of ocular injuries in general terms, outlining first aid, after care, and which types of injuries require the attention of a specialist.

#### BLUNT TRAUMA

Fortunately in the majority of instances of blunt trauma about the eye, the force is taken by the bony rims of the orbit, and the eyeball itself suffers no damage. The shock to the individual pride in the ecchymoses of the eyelids and conjunctiva following the blow of a fist is much greater than the physical damage to the eyeball. Such ecchymoses can be treated with leeches, with hot applications or with cold applications, and will last from six to fourteen days which is exactly the period of time they will last if untreated. Unfortunately, not all of the blunt traumata inflict such minor damage. Only too often, particularly in these days of high-speed automobile accidents, are the eyelids torn violently. In such tears, the most frequent solution occurs at the inner canthus, rupturing the lacrimal canaliculi. If the patient is seen within a few hours after the accident, the damage can be repaired not infrequently by a skillful ophthalmic surgeon with the ultimate restoration of function of the tear passages, but such surgical restoration is impossible when more than a few hours have elapsed. You will be called upon frequently to suture torn eyelids. Please do not use catgut for that purpose, but only the finest silk available, otherwise ugly and functional destroying deformities of the lid may eventuate. The utmost care should be used in such lid repairs

to try to restore the lids to their normal position in order to avoid entropion or ectropion. If the eyeball itself has suffered the force of the blunt trauma, any one of a number of intra-ocular complications may occur. There may be a rupture of the iris, a dislocation of the lens, a rupture of the choroid, or even a rupture of the eyeball itself. As a rule, such accidents are complicated by intra-ocular hemorrhage to such an extent that the actual damage cannot be estimated for many days subsequently. When you find the anterior chamber full of blood after a blunt injury to the eye, call in your oculist.

#### SHARP TRAUMA

Probably the most common injury to the eye is the presence of a foreign body on the conjunctiva or cornea. As a rule such foreign bodies are not difficult to find, but a certain percentage require the aid of focal illumination and binocular magnification for their detection. For this reason a condensing lens and a binocular head loupe should comprise a part of your working equipment. Foreign bodies on the conjunctiva are removed without difficulty unless they were hot and became imbedded in charred tissue, in which case surgical removal becomes necessary. However, foreign bodies in the cornea are a different matter. Surface anesthesia is essential and one should use an anesthetic that does not dilate the pupil. Butyn, holocaine or pantocaine is to be preferred to cocaine. If the foreign body is superficial, it can be wiped off with a moistened cotton-wound applicator; (never use dry cotton around the eye); but when the body is embedded it will have to be removed with a spud or some similar instrument. Be sure that you get it all out without more damage to the cornea than necessary. Only too frequently such foreign bodies are hot when they strike the eye and as a result they are surrounded by a ring of charred corneal tissue. The removal of this charred tissue is just as important as the removal of the foreign body. A very handy instrument for that purpose is a minute dental burr that has been boiled before use. After the foreign body has been removed, instill some bacterioidal

\*Presented before the Eighty-fourth Annual Session, Iowa State Medical Society, Davenport, May 8, 9, 10, 1935.

agent (I prefer one per cent mercurochrome). The eye should be bandaged only if a large amount of tissue has been removed. Please do not slop atropine into every eye that has had a foreign body in the cornea; use it only when there are indications of a beginning ulcer. Warn the patient of the possible danger of ulcer and use hot applications until all signs of irritation have subsided.

Occasionally, traumatic erosions of the cornea are followed by the condition of "recurrent erosion" where the eroded area breaks down repeatedly or remains open for days on end. The condition is extremely painful and frequently necessitates the use of morphine. Immediate local treatment of the eroded area will gradually bring relief, but it is necessary for the patient to fill the eye with any bland ointment immediately before retiring for many months.

A not uncommon condition these days is the presence of minute particles of glass in the conjunctival sac or even imbedded in the cornea. These may be bits of broken spectacle glass, but more frequently they are slivers from shattered windshields. The detection of such particles is extremely difficult and requires high magnification, even when examined in ultra-violet light, where the glass particles fluoresce. Your ultra-violet lamp which is employed for systemic radiation should not be used for such examinations because the unscreened rays may do more damage than the glass particles. The presence of these particles may be suspected from the history of the injury, even though there may be but slight continued irritation of the eye.

#### PERFORATING TRAUMA

You will undoubtedly be called upon to render first aid in the majority of perforating injuries of the eye, and as such, you can render invaluable aid to the patient by not doing too much. As a rule, perforating injuries are extremely complex and require highly specialized attention, each case being a law unto itself. You should determine, if possible, the character of the foreign body that caused the perforation and whether or not the foreign body remained within the eye. *Do not probe for it.* If particles of the intra-ocular contents are protruding through the wound of entry, it is better to keep hands off unless you are equipped to excise the prolapse and then cover the wound. You can be of great assistance in the prevention of infection which causes the loss of a high percentage of eyes after perforating injuries. Cleanse the external skin carefully and then flush out any extraneous matter from the conjunctival sac or the cornea with any sterile non-irritating solution, such as normal salt or boric

acid. Follow this with the instillation of a bacteriacidal solution (I prefer one per cent mercurochrome) and then bandage the eye. If you can put the patient into the hands of an ophthalmologist within the next few hours, you need do nothing further; but if specialized consultation is not available for at least twenty-four hours or more, a foreign protein injection should be given. Ten cubic centimeters of sterile milk may be injected intramuscularly, or two to fifteen million typhoid vaccine given intravenously. If no evidences of infection are present at the end of forty-eight hours, no further injection is necessary; otherwise, repeat the injection, increasing the dosage so as to produce a temperature of between 102.5 and 104 degrees. The local use of atropine depends upon the location of the injury, upon the presence of an iris prolapse, and several other factors. The removal of an intra-ocular foreign body or the after care of a perforating injury does not fall within your sphere of activity.

Following injury to the eye, either perforating or non-perforating, several interesting conditions which frequently are of medico-legal import may arise. Detachment of the retina is not uncommon and when it occurs immediately subsequent to an injury, may truthfully be attributed to the injury; but when the detachment occurs months or even years later, neither you nor anybody else is justified in making a positive statement that the detachment is a direct result of the injury. In younger individuals, interstitial keratitis may appear after a non-perforating injury to the eye. We know full well that the condition is due to syphilis, either congenital or acquired; but we know equally well that the injury may have been the exciting factor in arousing the condition to activity.

#### CHEMICAL TRAUMA

Chemical trauma to the eye seems to be a nearly unavoidable accident. Chemicals will explode, scattering their deadly contents into the eyes, and people will continue to make mistakes and put drops from the wrong bottle into the eye. Here it is nearly essential that you know the character of the injuring agent. Two main dangers to the eye exist in this type of injury; first, opacification of the cornea and resultant loss of vision; and second, burns of the conjunctiva and lids with eventual cicatricial contractures and malformities. In any case, your first duty is to eliminate as much of the injurious agent from the eye as rapidly as possible. Mechanical lavage is of more value than attempted chemical counter-action for seldom can a counteracting agent be used that is strong enough to counteract the injurious agent without causing further chemical damage to the eye. In the case



of an acid burn of the eye, flush with a solution of baking soda or even with normal saline if the soda is not available, and flush it, not with a few droppersful, but with pints of fluid. In the case of an alkali burn, use boric acid as the medium for flushing. Inasmuch as the burns are likely to be extremely painful, use local anesthetics freely so that the patient can assist you by keeping the eyes open. After the primary and extensive flushing, the eye should be kept full of any neutral oil, carbon oil being particularly useful. After you are sure that you have washed out as much of the injurious agent as possible, atropine should be used freely. The lids should be manipulated at frequent intervals to prevent adhesions insofar as possible. Remember that the destructive processes due to chemical burns continue to appear for days and even weeks after the injury has occurred; so be guarded in the prognosis.

Of recent years, chemical trauma to the eye by liquid tear gas or chloracetophenon happens sporadically. When the tear gas in vapor form and diluted by air, comes into contact with the eye, no damage results. The danger occurs when the liquid chloracetophenon strikes the eye, as may happen upon careless use of commercial tear gas pistols, etc. Most disastrous results will occur unless immediate action is taken. The MacNally treatment has proved the most satisfactory, but it must be instituted within a short time of the injury. Four cubic centimeters of sodium sulphite are dissolved in twenty-five cubic centimeters of water and this is then mixed intimately with seventy-five cubic centimeters of chemically pure glycerine. The eye should be washed out thoroughly with this mixture, *not with boric acid or normal saline or any other aqueous solution*. After the first thorough lavage, the mixture is then instilled as drops every half hour. Here as in other forms of chemical injury of the eye, the delayed after effects are likely to be more serious than the primary burn.

#### RADIANT ENERGY TRAUMA

Light waves that lie beyond either end of the visible spectrum are capable of damaging the eye when permitted to reach the eye in excessive quantities. In the infra-red range, that is, waves longer than 7,600 angstroms, the damages are those of heat only. It is not necessary here to discuss heat burns of the lids and surrounding epithelial tissues, for the same therapeutic measures apply here as elsewhere on the body surface. Corneal trauma from indirect heat is rare, but injuries from direct heat, such as a curling iron against the eye, occur not infrequently. Relief of pain by local anes-

thetics and prevention of adhesions constitute the only treatment necessary. The deeper and longer continued heat waves can and do result in an almost characteristic form of cataract, known as a glass-blower's cataract. Inasmuch as the majority of heat waves are absorbed by the cornea and lens, damage to the deeper structures is extremely rare.

The ultra-violet waves, those shorter than 4,000 angstroms, cause ocular injuries somewhat more frequently. The Klieg lights, formerly used in the motion picture studios, ultra-violet radiation lamps used for generalized body radiation, and the reflection of intensive sunlight in rarified atmospheres from snow surfaces, may cause a superficial stippling and even destruction of the corneal epithelium. This extremely painful condition is known as electric ophthalmia. Unless secondary infection sets in, the epithelium regains its normal structure in twenty-four to seventy-two hours without extraneous aid, after the source of radiation has been removed. Local anesthetics and iced applications may be needed to control the pain and the use of a non-irritating bacteriacidal agent for the avoidance of secondary infection is to be advocated.

#### REMOTE TRAUMA

Remote trauma to the skull may easily produce ocular results. In skull fracture accompanied by hemorrhage, the increased intracranial pressure not infrequently is manifest in the optic nerve head, as well as by muscular palsies. If the fracture involves the optic foramen or the orbit itself, hemorrhage into the orbit, or edema of the orbital contents, may produce an exophthalmos, an ophthalmoplegia, either internal or external or both, a rigid pupil, and a loss of sight. The recovery from these consequences depends upon the rapidity of absorption of the pressure producing fluid, and whether or not such fluid lies between the meningeal sheaths of the optic nerve. Frequently an old basal fracture that involved the optic foramen and that occurred months to years previously, can be diagnosed by the condition of the optic nerve head. There is no local treatment for such ocular complications of skull fracture.

These are some of the things that you may do and others that you may not do. Please remember that the main function of the eye is vision; consequently all efforts must be aimed at a preservation of that function. Do not try to repair damage to the eye unless you are physically and mentally equipped therefor. Call ophthalmic aid to your assistance, if it is available; if not, in your endeavor to repair, do as little damage as is humanly possible.

## THE BUSINESS SIDE OF THE PRACTICE OF OPHTHALMOLOGY AND OTOLARYNGOLOGY\*

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With the changing times, it is becoming increasingly apparent that practitioners of medicine must either take cognizance of same or suffer accordingly in the future. The scientific side of our profession has not only held its own; it has probably gone ahead of any other line of scientific endeavor, but while it has been so doing it has unquestionably neglected and ignored, to a large extent, sociologic developments as they affect the profession, and it is now high time that we give them consideration. Because of the high moral and ethical plane heretofore occupied by medicine, and because of the fact that deep within ourselves we felt that we were within the right, we perhaps have let pass without concern, certain trends and signs in the world about us, which would have caused us more concern if we had not been so occupied in endeavoring to advance and solve the problems in our own special line of endeavor.

Since the great economic upheaval of recent years, many of the sociologic problems, which we ignored in the past have become more or less acute. One of the greatest of these is the economic factor of the care of the sick. The effectiveness and efficiency of American medicine with regard to care of the sick has not been questioned, but the cost of same is being seriously questioned by a great many people today. Whether or not this state of "economic mind" will continue or not we do not know, but we cannot continue in an apathetic attitude without serious damage. If general economic conditions improve, especially as they affect the lower income brackets, things will probably resume somewhat, their previous aspect, but if they do not, or if improvement takes a long time in accomplishment, we may need every resource at our command to avoid being made the slaves of some "political bureaucracy."

The record of the defense of ourselves against economic encroachment in the last fifty years is not good. This is true, not only in Iowa, but throughout the country. Small, aggressive, commercially-minded minorities, have sent us down to defeat in countless instances. In our own state, we have run the entire gamut of cults and quacks, ending in the full licensure to the practice of medicine of one of the cults in the last thirty days. If you desire to learn just what was admitted to the practice of medicine in this instance, I would refer you to the report of Frederick Etherington,

of the College of Physicians and Surgeons of Ontario, page 1549 of the Journal of the American Medical Association, April 27, 1935. We did, through tremendous effort on the part of our officers and legislative committee, pass the basic science law in Iowa, almost at the same time that the osteopaths were given full licensure, but this is practically the first piece of inhibiting legislation as far as these cults are concerned that we have successfully supported in the last fifty years. With such a record it is imperative that we shake ourselves out of our lethargy and look about for a more certain and effective means of protection than we have had in the past. The next encroachments that we may find ourselves saddled with are, "corporation medicine," and its offsprings "chain store medicine," and "state medicine."

I do not believe that there is any branch of science that the press and laity are more interested in today than regular medicine. At every meeting of one of our great societies the advances that have taken place are given columns in the daily press which are eagerly and intelligently absorbed by the laymen. They need only to have the evils of exploitation of the public health for commercial purposes shown them to have a basic reaction that is greatly in our favor. We can meet the public in the field of education, with regard to the merits of our profession and win hands down, but unfortunately legislation is not always enacted on its merits, especially when the commercially minded and highly organized minority enters the lists. All phases of the development of our profession along scientific lines have been adequately and admirably taken care of for years, but protection against encroachment by groups not entitled to consideration, has been woefully neglected. Until this matter has been solved, we will not be safe in the pursuance of our chosen calling.

Our sister professions have fared in this respect as we have. Dentistry, pharmacy, veterinary medicine, and nursing, have all suffered throughout the years from our inability to enact necessary legislation. Our system of government has drifted into one of rule by organized minorities. We have no organization for such purposes. During the World War, it was found, after terrific loss of wealth and lives by the Allies, that it was necessary to combine forces, working for similar causes as a unit, and after this was done progress was made.

It is not the purpose here to detract in the slightest degree from the efforts of the various legislative committees of these groups. They have been efficient, unselfish, and untiring, but the record shows that it was not enough. We have been remiss ourselves in not helping at the proper time.

\* Presented before the Section on Ophthalmology, Otology and Rhinology, Eighty-fourth Annual Session, Iowa State Medical Society, Davenport, May 8, 9, 10, 1935.



The time has come when we should seriously consider the price of remaining further unarmed; when we should study and then correct the causes of failure to function, for the welfare of the public health and ourselves, along legislative and economic lines. Information and courses of procedure should be gathered and a system evolved that will wrench the rank and file of our profession from its indifference and lethargy, substituting instead comprehensive knowledge and enthusiastic efficient action when needed. I believe that this can be done.

One stumbling block that has always been in our path and that of our sister organizations has been the cry of self interest. By combining the aims of the five groups this objection can be removed; then with intelligent leadership, sound and thorough organization, interest and support by the rank and file, and ever watchfulness, we need have no fear for the future.

In order to accomplish desired results, we must depart in one respect from our inherited tastes and interests. Legislation in this state and country is arrived at through a political system called a democracy. The legislators are individuals selected by a system of balloting, and because of this, the only things they understand and fear, as far as their position in public life is concerned, are ballots. These ballots can be markedly influenced by a small organized minority if the larger unorganized majority is not wide awake. The large majority is never organized. Therefore, it is our need so to organize our own minority that it will be effective as far as ballots are concerned. It is in this respect that we have failed in the past, and it is in this respect that we must look for a new line of procedure in the future. By combining the ballot-getting possibilities of all the doctors, dentists, pharmacists, veterinarians, and nurses in Iowa, the course of public health legislation measures may be moulded in the interest of the public and the individuals concerned.

A measure along these lines is to be brought before the House of Delegates of this Association at this meeting. Two of the statewide groups namely, the pharmacists and veterinarians at their annual meetings have expressed their desire to participate in, and support, such a procedure. The dentists will consider it this week; the nurses next fall. A start along new lines must be made at once in order to be prepared. The fact that the present legislature has adjourned does not mean that it will not reconvene until January, 1937. A special session to consider federal economic legislation may be called before then. If there is any doubt in the minds of any member of this section as to whether or not the situation is imminent, I

would advise him to read carefully the report of the various committees on economics, legislation, etc., in the Journal of the American Medical Association, of May 4. It is better to cry "Wolf, Wolf," when there is no wolf, than to have the door unlocked and be defenseless when he appears. In many thinking minds it is considered certain that there will be legislative changes affecting the sick, socially and economically, and those lines of endeavor concerned with their care; health insurance, federal and state aid, etc., but whatever comes, we must prepare to influence its nature, so that the future of the practice of medicine will not be destroyed.

### THE MANAGEMENT OF HEMORRHAGE IN OPHTHALMOLOGY AND OTOLARYNGOLOGY\*

WAYNE J. FOSTER, M.D., Cedar Rapids

Since hemorrhage is the one complication that may convert a simple surgical case into a serious, or at least an annoying one, I believe it is worth our time to discuss this subject. One thing is true; no one in this audience can say that he has not had a fair amount of experience in managing hemorrhage. One might say that the general principles underlying the management of hemorrhage apply the same in surgery of all parts of the body, yet there are some particular problems in surgery about the head. It is often necessary to leave raw surfaces and depend almost entirely upon the individual's own mechanism for the control of bleeding.

No discussion of the management of hemorrhage would be complete without consideration of the individual who has those elements in his blood that lead to normal intravascular coagulation, and also a study of that rather small but very important group that has a marked tendency to bleed. The great number of patients who have a postoperative hemorrhage, have perfectly normal blood and by history and laboratory findings, we should recognize those patients who are bleeders and if surgery is urgent, render them safe for operation by proper preoperative treatment.

Much has been written about normal blood coagulation and many ideas brought forth as to how it takes place, but the generally accepted theory is that of Howell.<sup>1</sup> The following substances are essential for coagulation: fibrinogen, calcium salts, prothrombin, cephalin or tissue juice, and blood platelets. The lack of any one of them may be expected to cause bleeding. The con-

\*Presented before the Section on Ophthalmology, Otology and Rhinolaryngology, Eighty-fourth Annual Session Iowa State Medical Society, Davenport, May 8, 9, 10, 1935.

spicuous part of blood coagulation is the conversion of the soluble blood protein, fibrinogen, into the insoluble fibrin. Fibrinogen is a type of protein, is formed in the liver, and is present in a relatively constant quantity in the normal blood, running about 0.4 per cent. When normal blood clots outside the blood vessels, the fibrin is precipitated in the form of needle-shaped crystals which form an irregular meshwork, and probably cohere with one another at their points of contact. The conversion of the fibrinogen into fibrin is brought about by a third substance, thrombin. Thrombin has not been identified chemically, and is recognizable only by its capacity to cause clotting of fibrinogen solutions. Thrombin does not exist in active form in the circulating blood, but an antecedent substance is present which can be converted into active thrombin under suitable conditions. To this substance the name prothrombin has been given. Prothrombin may be obtained by extraction from blood platelets and from the marrow, probably from its platelet tissue. For the conversion of prothrombin into thrombin two substances are necessary: first, ionized calcium salts in suitable concentration; second, a substance from the juice of injured tissue cells, or from disintegrating leukocytes and platelets. There has been a great diversity of opinion as to how this substance acts. The part played by calcium salts is limited to causing or facilitating the conversion of prothrombin into thrombin, and for this change they are indispensable. Coagulation may be prevented by the addition, to perfectly fresh blood, of a soluble oxalate which precipitates the calcium. There is an optimum concentration of calcium for prompt coagulation, which is not far from that found in normal blood. An artificial increase in calcium above this level will not accelerate coagulation, and according to Howell,<sup>1</sup> may retard it. There are also in the blood, substances which specifically inhibit coagulation. The classic example of an antithrombin is hirudin, the active substance of leech extract. A substance known as heparin, having the activity of an antiprothrombin has been obtained from the liver by Howell.<sup>1</sup> The two substances, heparin and antithrombin, probably serve the highly important function of preventing coagulation of the blood within the vessels by preventing largely the formation of thrombin.

Cephalin is the name given to the active substance in tissue juice which assists coagulation. Howell<sup>1</sup> believes that in normal coagulation cephalin acts by neutralizing heparin and antithrombin. From a clinical standpoint it is important for us to know that the ordinary clot formation,

as seen in the test tube, never occurs within the vessels of the living body. The form of blood coagulation which is of practical importance in stopping hemorrhage is the process of intravascular clotting, that is, thrombus formation. In thrombus formation, according to Clough,<sup>2</sup> the platelets play the initial and the essential rôle. The platelets adhere in large numbers to the areas of damaged endothelium and to each other, and gradually accumulate to form a mass which may partly or completely occlude the vessel. This orderly deposition of platelets gives the thrombus a definite structure which the ordinary extravascular clot does not possess. Fibrin is then precipitated out of the plasma permeating the mass of platelets, which is thus converted into a coherent mass. Retraction of the fibrin serves to complete the process of occluding the vessel.

There are normally 200,000 to 300,000 platelets to the cubic millimeter. A deficiency of blood platelets is the most common cause of pathologic bleeding. They are indispensable for thrombus formation. They are the main, if not the sole, source for prothrombin, and are one source of cephalin. For practical clinical purposes where from the history, pathologic bleeding might be suspected, the laboratory tests should include the bleeding time, coagulation time, blood calcium and a platelet count.

In essential thrombopenic purpura, sometimes called purpura hemorrhagica, there is a marked reduction in blood platelets. The coagulation time is normal but the bleeding time is greatly prolonged. Nygaard<sup>3</sup> found that there was a low plasma coagulation time in this condition, and in a study of seventeen cases shows the consistently low platelet count. He reaches the general conclusion that the test for the coagulability of the plasma is a general test for the coagulability of the blood. The only effective method of stopping bleeding in severe cases of thrombopenic purpura is transfusion. The relief lasts only three to four days and then transfusion must be repeated.

Hemophilia is a rare hereditary disease characterized by a tendency to bleed a long time from slight injuries. The disease is dependent on a constitutional peculiarity of the individual. It is practically limited to males. The tendency may be transmitted through many successive generations of females, to reappear in some remote male descendant. These patients will practically all be recognized by history alone. The laboratory tests show the bleeding time is normal or practically so, the blood clot after it once forms retracts normally, the coagulation time is greatly prolonged. Transfusion is again the only measure which is reason-



ably dependable. According to Clough<sup>2</sup> bleeding practically always ceases promptly and there is a corresponding shortening of the coagulation time. The effect of the transfusion lasts three or four days.

*Tonsil hemorrhage.* Since in this paper we are as greatly interested in the prophylaxis of hemorrhage as in the management of the condition once it occurs, I will mention some of the things that have a bearing on the probability of bleeding after tonsillectomy. Certainly no effort is being made to establish a set technic for the tonsil operation but I believe that a careful dissection from top to bottom, outside of muscle, with little or no tissue left to be cut off with the snare, is the type of operation that leads to the least number of postoperative hemorrhages. Each tonsil fossa should be dry when the patient leaves the table. If bleeding does not stop promptly, each bleeding point should be ligated with as little trauma as possible. In my routine procedure many throats have no vessels ligated at all. One tonsil is removed, the free bleeding is partially controlled by gentle pressure and the second tonsil is dissected out. The first fossa is then inspected and points that are still bleeding are tied, with a No. 1 iodized gut. The ligation is done over the end of a hemostat as in tying off any bleeding point. It is important that as little tissue as possible be included in this ligation.

In the first twenty-four hours after a tonsillectomy the patient should be observed very carefully. Especially is this true of children. It is a common thing to have quiet bleeding going on, the blood being swallowed, and the first evidence of this bleeding being a profuse emesis, so that the mere fact that the child is not spitting blood, does not necessarily mean that bleeding is not occurring. We have all had pupil nurses report no bleeding and yet when we saw the child, found her pale, with sighing breathing, rapid pulse, and all the evidence of a severe hemorrhage. The cardinal principles in managing tonsil hemorrhage are: a very early recognition of hemorrhage, and the prompt adoption of measures to stop it.

Given a postoperative tonsil patient that is bleeding, I believe that patient should be returned to the operating room at once. If the patient is such an age that cooperation cannot be gained otherwise, a general anesthetic should be given, the clots thoroughly removed from the fossa, the bleeding point or points uncovered and ligated. It is true that some patients cease bleeding spontaneously, but the temporizing measures which are frequently given, such as: pituitin, fibrogin, thromboplastin, etc., are quite useless. It is much safer from every

angle to stop the bleeding when it is first discovered, than to wait until the quantity of blood lost renders the patient a poor risk in which to carry out the necessary measures to stop bleeding.

A word should be said about secondary bleeding in tonsil surgery. I refer to the bleeding that comes on the fifth, sixth, and seventh days, or even up to two weeks after a tonsillectomy. This bleeding is usually not severe, although it may be so, and very frequently stops spontaneously. Local infection is supposed to play a part in this type of bleeding, the bleeding coming as a result of slough of tissue. Some men feel that the very free ligating of bleeding points at the time of operation is a predisposing factor in secondary hemorrhage. These patients should be kept under close observation and managed according to the severity of the hemorrhage. It should always be borne in mind that if all other methods of control of tonsil bleeding fail, the external carotid artery or its branches may be ligated.

*Adenoid bleeding.* The management of adenoid bleeding is rather a different proposition from that of tonsil bleeding. I believe most of us do not have a perfectly dry nasopharynx when the patient leaves the table. As a matter of fact, it has been my observation that the bleeding keeps up as long as the adenoid wound is sponged. Therefore, we depend almost entirely for the control of adenoid bleeding upon the individual's mechanism to stop the hemorrhage. Should real adenoid bleeding start in a few hours after operation the same underlying principles apply to its management as in tonsil bleeding. It may be possible to lift up the soft palate, pick up the bleeding point and ligate it, but more often the postnasal pack is used. If the bleeding is slight, the patient can be observed very carefully and be given a chance for spontaneous control. Since there is the danger of stirring up a middle ear infection from a postnasal tampon, we are reluctant to put in a pack unless it is absolutely necessary. In a recent article Richards<sup>4</sup> has made a thorough study of adenoid bleeding, and brought out some interesting facts. In his series of cases adenoid bleeding occurred more than twice as frequently as did tonsil bleeding. There seemed to be more bleeding in the case in which the operator insisted on a dry nasopharynx before the patient left the table, and less bleeding in the group of cases in which nothing was done to the nasopharynx after the removal of the adenoids beyond careful palpation for adenoid tags. He states that all writers agree unanimously on the point that adenoid tags predispose to postoperative bleeding. He reaches the conclusion that prolonged deep anesthesia predisposes

to bleeding, and has adopted a technic which delays adenoidectomy until a complete return of the pharyngeal reflex.

*Hemorrhage in mastoid surgery.* Whenever we enter the mastoid there is always the possibility of opening the lateral sinus. A mastoidectomy should not be started without full regard for this possibility and suitable packs and equipment be on the table to take care of this emergency. Dixon<sup>5</sup> has done some very interesting experimental and clinical work on the use of viable muscle, for the control of bleeding in injuries to the lateral sinus, and reaches the following conclusion: "viable muscle on account of its rich supply of tissue juices, hastens the formation of a firm thrombus and plays an important part in the normal control of bleeding from an opened vessel. When viable muscle is applied to the opened sigmoid sinus it quickly unites to the vessel wall and aids in the healing process. As the muscle carries an additional blood and lymph supply to the wounded part it also aids in the control of the infection. Recanalization of the injured vein in the dog always occurs past the point of obstruction when viable muscle is used. The results of these experiments upon the dog lead me to believe that viable muscle also permits the recanalization and the normal restoration of function of the injured sigmoid sinus in the human." If the lateral sinus has been opened intentionally or otherwise, and the bleeding controlled by packing, there should be no hurry about the removal of these packs. It is best to dress and repack in the operating room where one can be fully prepared to take care of fresh bleeding.

In managing hemorrhage from the nose, it seems to me that there is only one practical point to be brought out. If bleeding is not controlled by the ordinary local measures, such as the nasal pack, the postnasal pack, and transfusion, the bleeding can be stopped by tying off the external carotid artery or its branch, the internal maxillary, which carries the main supply of blood to the nose. The necessity for this procedure is exceedingly rare.

*Hemorrhage produced by deep infection in the neck.* The most serious type of hemorrhage that we are forced to deal with is the bleeding produced by the erosion of one or more of the large vessels of the neck, as a result of infection. This is a

possibility whenever we have a peritonsillar abscess, retropharyngeal abscess, or parapharyngeal infection. Fortunately I have not had such a case to deal with. Salinger and Pearlman<sup>6</sup> in a splendid article reviewed 231 cases published in the literature, and added ten cases of their own. The table at the bottom of the page shows the distribution of these cases.

There were thirty cases of cervical abscess, mostly cellulitis with sloughing in the neck. The common carotid was ligated in five patients and two recovered. Surgical exposure and autopsies in the remainder disclosed the source of hemorrhage to be the internal jugular vein. Totals for all groups were as follows:

Cases not ligated.....	154
Recovered.....	36
Mortality.....	77%
Cases ligated.....	72
Recovered.....	47
Mortality.....	35%

Autopsy reports of 90 cases show erosion of internal carotid 49 times (17 with false aneurysm), erosion external carotid four times, common carotid nine times, and other vessels 14. Omitting the jugular hemorrhages, which belong in a class by themselves, there were 76 deaths due to erosion of arteries. Grouping erosions of the internal and common carotid arteries we find a total of 58 deaths which could only have been prevented by ligation of the common carotid artery. This leaves only 18 cases where the hemorrhage might have been stopped by ligation of the external carotid artery.

From these figures it is established that the internal carotid is involved much more frequently than the external carotid artery or its branches. Cases in which ligation was carried out reduced the mortality more than 50 per cent. From an anatomic basis we know that the internal carotid artery lies much closer to the pharyngeal wall than the external. The external carotid artery gives out branches and consequently becomes smaller as it ascends, while the internal carotid artery, giving off no branches in this region, loses none of its caliber as it approaches the base of the skull. The internal carotid artery makes several curves in its course in the neck, which may become exaggerated into tortuosities that will bring it into close proximity with the pharyngeal wall.

Brauer<sup>7</sup> has attempted to define the source of hemorrhages from their character and divides them into six groups:

1. Hemorrhage from the ear; false aneurysm of the internal carotid artery.

Procedure	Peritonsillar	Peritonsillar complicated by Parapharyngeal	Retropharyngeal	Retropharyngeal complicated by Parapharyngeal	Parapharyngeal
Ligation external carotid.....	11	4	2	1	1
Recovered.....	8	3	0	0	1
Ligation common carotid.....	17	6	5	14	7
Recovered.....	15	4	3	8	3
Not ligated.....	58	21	25	13	13
Recovered.....	29	4	1	0	1



2. Sudden single foudroyant hemorrhage; false aneurysm of the internal carotid artery.

3. Several minor prodromal hemorrhages followed by a foudroyant fatal one; false aneurysm of the internal carotid artery. This group is differentiated from Group 5 by persistent, even increasing, dense swelling in the throat or neck.

4. Several severe hemorrhages in succession, generally from branches of the external carotid artery.

5. Recurrent, slight to moderate, hemorrhages due to local vessels of the tonsillar bed or the palate.

6. Venous hemorrhage.

Salinger<sup>6</sup> points out that the dangerous cases are those in which one or more of the following factors are present:

1. Spontaneous hemorrhage or hemorrhages so severe as obviously not to be arising from a minor vessel.

2. A protracted course in which the swelling fails to disappear following a previous incision.

3. Hematoma of the surrounding tissue as evidenced by submucous discoloration or tense, brawny swelling.

4. Increasing pain, swelling locally and in the neck and trismus, despite incision of the abscess and long after the course of a normal peritonsillar abscess has been run.

5. The presence of pulsation in the peritonsillar area.

If any of the above factors are definitely established, he recommends the exposure of the carotid sheath, and if the condition of the patient is not too critical, a search for the source of the hemorrhage. In the minority of cases one of the branches or the stem of the external carotid artery will be at fault and should be ligated. If one fails to locate such a pathologic change, the only safe procedure is ligation of the common carotid artery. Especially in retropharyngeal abscesses and parapharyngeal infections he feels that the ligation of the common carotid artery is the only treatment. This is a serious procedure, and 25 per cent of all ligations, regardless of the age or ailment, are accompanied by serious cranial complications. The cerebral complications are produced by a sudden shutting off of the arterial supply to half of the brain. In order to prevent hemiplegia and other cranial symptoms, the delayed ligation is a desirable procedure. This would hardly be practical in the case of a severe hemorrhage.

#### CONCLUSIONS

In conclusion I would stress the necessity of a very careful history with particular emphasis on

the tendency to bleed. I believe we brought out that the ordinary coagulation time is not an adequate procedure in determining low coagulation. The bleeding time should always be checked and a platelet count done in all suspicious cases. Any hemorrhage should be treated promptly. Blood volume should be replaced promptly by intraperitoneal or intravenous normal salt. In general I believe we frequently overlook strong indications for transfusion. It is the one dependable treatment for the bleeder. It not only replaces blood volume, but supplies the necessary elements for coagulation and in those cases in which bleeding is produced by infection, is excellent treatment for the infection.

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#### Discussion

**Dr. Edwin W. Cobb, Marshalltown:** This subject is a large field to cover in one paper, but Dr. Foster has given us a very good discussion of the main points, and especially of the blood composition and pathology.

Perhaps the most frequent hemorrhages occurring in our field, are those from the nose, of non-surgical origin. Here again, the history is all important, and a thorough examination by a competent internist is indicated. Locally, the minor hemorrhages can be controlled by various chemical caustics, actual cautery, or elevation of the mucosa and packing between the mucosa and the septum; some patients in the country, are well taken care of by the insertion of a thin slab of salt pork against the septum bleeding point. Calcium is indicated for most patients, plus a good general tonic in children. I have seen some cases of frequent nasal hemorrhage in children clear up by the removal of diseased tonsils and adenoids.

Transfusions aid greatly in most cases of severe hemorrhage, especially those complicated with severe infection. Last fall, I had a patient who was struck on the side of the nose with a golf ball, resulting in a most severe hemorrhage from the nose. Replacement of tissues, and heavy packing did not control the bleeding; I was just about to tie off the external carotid artery, when the many blood transfusions, previously administered, caused the hemorrhage to cease.

In all our pharynx and tonsil surgery, we must be on guard for anomalous blood vessels. In some cases, the pulsating movements are readily seen on the lateral pharyngeal wall, while in others, cases can be discovered by palpating this area; the internal carotid

artery has been found to be very tortuous in this region.

I am glad to note that Dr. Foster advises tying all severe bleeding points in tonsil surgery. While I have never been called upon to ligate the common carotid artery, nevertheless, if I had a case where the ordinary procedures, plus transfusions did not stop the hemorrhage, I would not hesitate to ligate the common carotid artery.

In the control of hemorrhage from the ophthalmologic standpoint, we must first think of the eye as a highly vascular organ, wherein even a slight hemorrhage can result in a large loss of vision. The retinal vessels are end arteries; therefore, most retinal hemorrhages are arterial.

The control of hemorrhage in cataract surgery is all important. In the Mueller and Linder Clinics in Vienna, all patients with a systolic blood pressure of 150 or more, have 200 to 300 cubic centimeters of blood removed, just prior to the operation. By this procedure, they report very few retinal or choroidal hemorrhages, occurring in cases of advanced age, with rather high blood pressure.

I want to thank Dr. Foster for the privilege of discussing his very interesting and instructive paper.

Dr. L. G. Howard, Council Bluffs, read by Dr. H. M. Ivins, of Cedar Rapids: I will not attempt to amplify on the particular points given by Dr. Foster, but will direct my discussion more especially toward my own personal experience with certain specific, frequently observed types of bleeding which are seen in otolaryngologic practice. Because these particular examples of bleeding are not rare, we have all had sufficient experience in our attempts at controlling them to develop individual ideas regarding the technique best adapted to the case in question. Occasionally one of us may develop a new or original method, although on this point of originality one should perforce speak advisedly.

For example, in my early days in private practice I successfully treated a number of cases of recurrent nasal epistaxis, of the type which comes from a vessel low and anteriorly on the nasal septum, by resecting a disc of the septal cartilage beneath the area involved. I found that when healing had occurred, the tendency to bleed was obviated by the fibrosed soft tissues. Trouble, at least in the territory from which the cartilage had been removed, did not recur. Although I believed this treatment to be original with me, I neglected to report my method. A few weeks ago I read an article in one of our special publications wherein this method of treating this type of nasal epistaxis was reported by an European author as his original and recent discovery. Perhaps he and I are both wrong. Many others may have thought of and used what, after all, is a logical and obvious method.

At any rate, in cases with more or less thinning and erosion of the nasal mucosa, complicated by occasional hemorrhage, the submucous removal of the underlying cartilage will, in a majority of cases, end the trouble.

As to the use of the actual cautery, chemicals or diathermy, I have never felt that such treatment was either logical or scientific. At best these are but temporary expedients and the resulting scab or crust, when removed, frequently leaves a condition even more likely to favor bleeding than was the untreated membrane before the cautery was used.

Should it be impractical to resect a piece of cartilage, or in cases where the bleeding point lies over bony tissue, as for example, where an antro-meatal window resection has been done in order to drain a maxillary sinus, and bleeding occurs in the rather inaccessible area beneath the turbinate, I have found that injecting a fairly large bleb of equal parts of a solution of suprarenalin and normal saline will usually control the hemorrhage. This injection should be made with a fine needle beneath the periosteum or perichondrium.

A year or two ago I devised a ligature-tying hemostat (now being distributed by Bard-Parker, Inc.) by means of which bleeding points lying in more or less inaccessible parts, such as the tonsillar fossa, may be grasped and ligated. Since then I have made it a routine procedure to ligate every possible bleeding point in my tonsillectomy patients. And since initiating this practice I have had no cases of post-operative tonsil hemorrhage, either immediate or delayed. Other things being equal, I cannot agree that delayed bleeding may be caused by too frequent application of ligatures. I have found that my purpose is best suited by the use of No. 1 waxed braided silk ligature material, rather than by the use of catgut in the throat.

Lack of time prevents further discussion of bleeding from the nose or throat. I do wish, however, to mention a point regarding the ligation of vessels cut while making a mastoid incision. Perhaps in only one out of two hundred times is it really necessary to ligate a vessel before removing the hemostat. If the wound is gently but firmly approximated with metal clips, if the dressings are thick and snugly and firmly held by a properly applied bandage, no ligatures need, as a rule, be applied in any case. Thus healing occurs far quicker and the resulting scar is far more sightly. I have never been troubled by hemorrhage in these cases. Hemorrhage from diploic vessels as a rule responds to pressure, adrenalin and time. The use of bone wax in mastoid surgery has been far from satisfactory in my hands. On one occasion I controlled rather persistent bleeding from a large vessel in this manner, only to have the wound break down several weeks after healing seemed complete. Fragments of the wax were extruded through fistulous openings in the scar at intervals for several months, and what otherwise would have been a good cosmetic result was, on this account, gradually transformed into a depressed and irregular cicatrix. In an infected wound, bone wax must, in a large percentage of cases, act as a foreign body; therefore its use is seldom to be recommended.

Time will not permit me to discuss many interesting and frequently encountered phases of this sub-



ject. There can be no question as to the importance of such a complication as hemorrhage in otolaryngologic practice, and if these few remarks serve to arouse further investigation among our members, their purpose will have been fully served. Dr. Foster is to be congratulated for the valuable paper he has presented before the meeting today.

**Dr. H. M. Ivins, Cedar Rapids:** In regard to tonsil hemorrhage it seems to me the first thing you should do is to make a diagnosis of the type of tonsil hemorrhage you have. If you have the type of tonsil hemorrhage that is hemophilic, then, of course, the report that has been given to you by Dr. Foster is the proper method of handling that type.

How many of us have the ordinary tonsil bleeding? The patient is operated on in the morning and in about four hours the nurse calls and says the patient has a tonsil hemorrhage. I have heard it said a great many times that the new instruments as suggested in this paper, wherein a clamp is placed over the blood vessel and the ligature is placed around it is the scientific way, that the passing of a needle through the tissues is very likely to give you hemorrhage followed by an infection, possibly an infection of the throat. I think we should consider why we have a hemorrhage following tonsillectomy. I am thinking now not of the type I spoke of in the first place, but the second type that comes on three or four hours afterwards. In my judgment, in the majority of cases, the clot has already materialized. There is a clot in the blood vessel. Nature has taken care of the matter through the longitudinal muscle fibers in the blood vessels, connected with the action of the circular fibers. The end of the blood vessel has been constricted and your clot has formed in the blood vessel. Through some manipulation, coughing, or something of that sort, after this blood vessel has been quite firmly formed, it is expelled. The natural thing is that the blood vessel muscles have been more or less paralyzed. The result is a continual seepage from this particular vessel. The ligature of this vessel is, of course, the thing that will stop the hemorrhage or, as I have found in my own practice, often a little stimulus of the muscle fibers will produce a secondary stoppage of the hemorrhage and perhaps there will be no further bleeding from it. I refer to the administration of pituitrin to stimulate the contraction of these vessels. Later on, perhaps, there is not the misfortune of coughing and the expelling of this blood clot. That seems to me to be answering nature's attempt to stop that particular hemorrhage. . . .

I have never had an infection from a ligature put in the throat by a needle. I have heard it said that that was bad practice, but over a good many years of practice I have used that method and I have never had an opportunity to regret it. I do not believe that it is a bad policy.

**Dr. William Pearson, Des Moines:** I am going to urge every member of the section to read carefully this paper by Dr. Foster when it appears in the JOURNAL. It is worth while. It is very apparent that

he has gone into the subject in a critical manner. He has made recommendations, and his recommendations are all sound.

In regard to the carotid artery, remember, if you could anticipate the rupture of the carotid artery it would be much better to tie it when you have no infection to contend with. It is very different when you have an open carotid artery in an infected area. If it is not open, tie it. A slow compression under those conditions, would be a much safer procedure. We have not arrived at a point where we want to employ the ligature in these large abscesses following inflammation of the throat if it can be avoided; the tying of the carotid artery itself is something to be reckoned with.

In these patients that bleed, if you will inquire as to whether they have had inflammatory trouble at any time in this area, you will be warned to be prepared to meet complications. If there has been an injury to the sympathetic nervous distribution, hemorrhage is prone to be more severe because of the lack of ability on the part of the autonomic nerves to stimulate the arteries to contract.

I have never lost a patient from hemorrhage but did have a tonsil patient die about sixteen hours following operation, not from the result of hemorrhage, but because of what the autopsy showed was an anti-mortem clotting of the blood vessels extending to the cranium; there was no collection of blood in the stomach of the patient.

A few days following this experience I met and talked with Dr. Chevalier Jackson and one of his associates, who at the time were preparing a paper on complications resulting from tonsil operations. They, apparently, had never heard of such a case.

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### PRECAUTIONS AGAINST MALPRACTICE\*

WILLIS J. O'BRIEN, Attorney  
Des Moines

It is the purpose of this paper to discuss with you the subject of malpractice and suggest my ideas of precautions which may be taken to avoid the possibility of suits for damages because of claimed negligent or unskillful treatment of patients who engage physicians or surgeons to treat their injuries or diseases.

While many cases are legitimate, in the sense that the claims are well grounded in fact and presented by attorneys of standing, it is estimated that more than half of the cases arise out of a desire on the part of a patient to secure easy money and an equal desire, on the part of an unethical attorney, to participate. Suits of this type annually cost the members of the medical profession millions of dollars in expense and damages. This sum represents a part of the overhead expense

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of each individual practitioner. Coupled with this is the unfavorable publicity, which is a stigma affecting the profession generally, and the possible loss of reputation of the individual involved in the controversy. Whether or not a suit is just or unjust is seldom known by the public, and whenever such suits are started in court the professional standing of the person charged with the omission of duty, undoubtedly, suffers in some measure. A successful suit awarding damages always encourages the starting of other suits, consequently elimination by prevention is the answer to this serious and expensive problem, which, at some time, may confront each practitioner. Nowadays, for several reasons, including workmen's compensation, insurance and the like, the public generally has become damage suit minded whenever an event happens which affects their health or property, and by reason of this situation malpractice suits have become the rule rather than the exception. Precautions to avoid such claims are absolutely necessary in order to minimize the suits and eliminate the expense and probable loss of professional standing.

While perhaps all of you are familiar, in a general way, with the meaning and application of the term "malpractice," I want to call to your attention a few of the general principles which are involved as interpreted by the courts, all of which pertain to the laws of the state of Iowa.

Malpractice means negligent or unskillful practice resulting in injury to the patient, and comprises all acts and omissions of a physician or surgeon, as such, to a patient, as such, which may make the physician or surgeon civilly or criminally liable. In other words, if a physician or surgeon is guilty of any dereliction of duty toward one of his patients, or fails to use proper skill or knowledge in the diagnosis or treatment of a patient's ailment, he is guilty of malpractice. Where a physician or surgeon is employed to treat an injury or ailment he agrees with his patient, first, that he possesses that reasonable degree of learning and skill which is ordinarily possessed by others of the profession; second, that he will use reasonable and ordinary care and diligence in the exercise of skill and the application of his knowledge to accomplish the purpose for which he is employed; and third, that he will use his best judgment in the application of his skill in deciding upon the nature of the injury or ailment and the best mode of treatment. The physician does not in accepting employment impliedly guarantee a cure in any case of any injury or disease. The physician is bound to bring to the service of his patient and apply to the case that degree of knowledge, skill, care and attention ordinarily possessed

and exercised by practitioners of the medical profession under like circumstances and in like localities. The law is well settled that a patient who is treated by a physician is entitled to a thorough and careful examination such as the condition of the patient and attending circumstances will permit, with such diligence and methods of diagnosis for discovering the nature of the ailment as are usually approved and practiced by medical men of ordinary or average learning, judgment and skill in that community or similar localities. An attending physician does not insure either correct diagnosis or correct treatment but is required to possess the skill and learning which is possessed by the average member of his profession in that or similar localities and to apply that skill and learning with reasonable care. If, by the exercise of such care and skill, the specific injury would have been discovered, a failure to make a proper diagnosis is negligence and it is a duty of a physician, in taking care of a patient, to follow the case and to give proper instructions to the patient as to his future acts and conduct. It cannot be disputed that the correct treatment and probable result are scientific questions, and alleged malpractice, in any case, must be substantiated by the testimony of expert witnesses. It is the province of experts, physicians and surgeons to say whether the treatment and acts of an attending physician, in any case, were or were not proper.

An unfortunate result is not, in itself, evidence of negligence or the want of skill on the part of a physician or surgeon. The burden of making a case of negligence is upon the claimant and must be established by the preponderance or greater weight of the evidence. It is one thing to say that an adverse result is not, in itself, evidence of negligence or want of skill on the part of a physician, and another to combine the result with other facts and circumstances in determining the fact question. The rule is that while the result alone is not, in itself, evidence of negligence yet the same may be considered together with other facts and circumstances, in a given case, in determining whether or not such result is attributable to negligence or want of skill.

In malpractice cases it is not sufficient to prove that a person died or was injured and that a physician or surgeon was negligent. It must be proved that there was a causal connection between negligence and death or injury and such negligence must be the proximate cause, that is, the direct and immediate cause of the death or injury. In your experience, no doubt, you have learned of many different cases where malpractice has been claimed. Typical illustrative cases where malpractice has been held established are, where a



surgeon failed to take proper precautions against infection, where the sphincter ani muscle was unnecessarily cut, where a surgeon in closing a wound improperly left a foreign substance therein, where carbolic acid was negligently spilled on patient, where a tumor was diagnosed as pregnancy, where x-ray was negligently applied, where there was negligence in the delivery of a child, where a physician failed to use ordinary available means of diagnosis, where a surgeon knowingly performed an unnecessary operation, where an anesthetic was negligently administered and where a physician failed to give a patient instructions as to the care of his broken leg. Illustrative typical cases where malpractice was not established are, where a physician attending at child birth failed to remove a portion of the placenta, where there was reasonable doubt as to the proper diagnosis, where physician failed to amputate the patient's finger on which there was a boil, where physician falsely represented that he had removed patient's kidney and where a physician represented he could cure an incurable disease. The foregoing and many others could be cited as typical cases and there are, undoubtedly, many other examples of claims within your own knowledge.

Since prevention is the best cure, as it relates to disease or law suits, I want to give you my ideas which, I trust, will be helpful as preventive law suit medicine. The first remedy is to suggest that you keep up to date in your profession. This does not mean that, of necessity, you should adopt all the suggestions and indulge in experimentation but regular attendance at your national, state and local medical society meetings will permit you to accumulate a large amount of worthwhile information and stimulate a desire for further study and knowledge of your particular practice. The attendance at clinics, study clubs, graduate extension courses at your medical school and authoritative medical literature will be found materially helpful in keeping in step with the measure of skill or knowledge required by the law in the diagnosis or treatment of a patient's injury or ailment.

The second remedy and a most important one is to keep accurate case records. While the value of this suggestion is well known to you, no greater protection is afforded than the keeping of detailed office records, beginning with the employment and continuing until the treatment ceases and the patient is discharged. When, in your belief, a patient, through dissatisfaction or otherwise, terminates the rendition of the service before you are ready to discharge him as cured, it is always good practice to make a written record of this fact and to notify the patient, in writing, of the necessity for further

care and treatment and that the relationship, so far as you are concerned, has not terminated. While I am informed that all well regulated hospitals secure a written consent from a patient about to undergo an operation, for your own protection it is your responsibility to see that this record is complete. In the event that an operation is recommended and refused, the patient should be asked to sign a statement indicating the refusal of an operation or further treatment. Such a statement, signed by the patient, would be invaluable as a part of the case record in the defense of a possible suit. A written consent to perform an autopsy should be obtained without exception. Frequently x-ray films and laboratory examinations are the foundation of your diagnosis or treatment. Written interpretation of the x-ray films and a written report on a laboratory examination should be religiously kept as a part of your case records. Since records are, perhaps, the most valuable evidence in the defense of suits and in the prevention of suits based on false claims, it is essential that such records not only be properly kept but kept in a proper place so that the hazard of loss by fire or theft be minimized.

Another precautionary measure is to exercise care in the upkeep of your office and hospital equipment. Many cases of malpractice arise out of defective equipment. Since the use of electrical equipment is quite extensive this has become a serious source of trouble. Adequate, regular inspection is the recommendation, with an attendant always present when such equipment is being used for treatment. It is your duty to see that your office equipment and instruments are kept in repair and this applies to hospital facilities and equipment for which you may become responsible. Make care rather than chance your watchword.

Many of you are extremely busy practitioners; as a result it is necessary to delegate many duties to nurses and subordinates; you are likely to be responsible for their acts. Important treatments should not be permitted without the doctor's presence and supervision. Dissatisfaction and trouble with a patient too frequently arise because of a lack of the personal attendance when treatments are being given. This is especially true when any services are permitted which might exceed the right of assistants and invade the field of the practice of medicine.

To avoid litigation another thought should be kept in mind; frequently patients become dissatisfied with the physician originally employed and the services are discontinued and another engaged. Adverse criticism in the matter of diagnosis or treatment of the patient may be warranted, gen-

erally it is a matter of opinion. Many suits have arisen which have been based upon the information given in the criticism of his predecessor by the second physician to the patient. Statements of criticism are not often made in a derogatory spirit but to inspire confidence and assurance of the patient. Many times statements are unwittingly made. Most remarks are useless and unnecessary. Reputations cannot be built upon criticism of a brother practitioner. Talking too much is a failing of a large majority of all the people. Excellent advice to be accepted, as a precautionary measure against malpractice, is to keep your own counsel insofar as criticism of a brother practitioner is concerned, especially as it relates to a discussion of diagnosis or treatment with a dissatisfied or disgruntled patient.

Another source of serious trouble relates to the collection of fees for your professional services. Regardless of the satisfaction or dissatisfaction of a patient this question is always a problem. If there is a thought in your mind that a patient is dissatisfied with your services, it is well to keep in mind that claims for malpractice ordinarily outlaw, under the statute of limitations of the state of Iowa, two years after the happening of the event. Suits for malpractice are generally based on negligence, some suits might properly be based on contract but they are the exception and would not outlaw in the two year period. Fees for services on an open account do not outlaw for five years and on a written contract for ten years. Suits for the collection of fees within the two year period against dissatisfied patients frequently bring forth a counterclaim for damages based on malpractice. With the above information the advice to you of a precautionary measure is obvious.

This subject covers a wide field and because of the limitation of time I have touched only briefly several important points. They are all essentially important and, I believe, keeping the suggestions in mind will strengthen your position in the practice so that many malpractice claims and law suits may be successfully avoided.

#### A SURVEY OF CESAREAN SECTIONS IN IOWA FOR THE YEARS 1930, 1931 AND 1932\*†

(Preliminary report)

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In the course of a previous study of Iowa birth certificates for 1930-1932, it was determined that

\*Presented before the Eighty-fourth Annual Session, Iowa State Medical Society, Davenport, May 8, 9, 10, 1935.

†This study was financed by the Division of Maternal and Infant Hygiene.

during those three years, cesarean sections constituted 1.0 per cent of all deliveries in the state. There were 955 cesarean sections recorded among 91,738 births, for which the method of delivery was specified. This report comprises a statistical study of these operations from data obtained from questionnaires completed by the reporting physicians, to whom my gratitude is expressed.

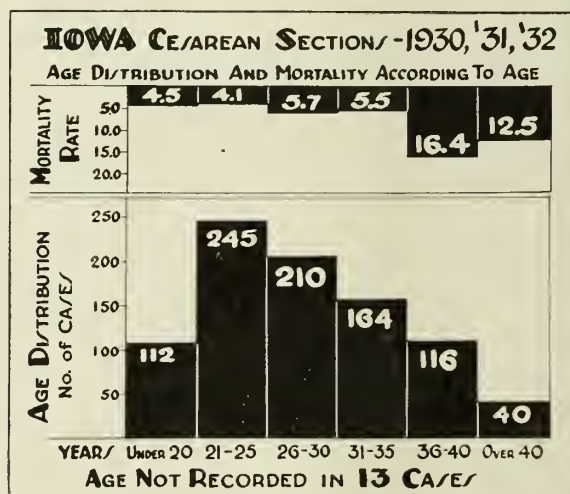
It has been possible to gather information concerning 916 of the 955 births, representing 900 operations, there having been 16 cases of twin gestation. Among the 39 cases for which data are not available, three were found on closer investigation not to have been cesarean sections, in four cases the physicians' records could not be located, and in 32 instances the reporting physicians refused to cooperate.

#### GENERAL DATA ON THE MOTHERS

*Color.* There were 889 white women, six colored, and five for whom no statement concerning color was made.

*Age.* The mothers' ages ranged from fourteen to forty-eight years. The only point of interest is that 4.4 per cent of the women subjected to abdominal delivery were more than forty years of age, while this group represented only 3.1 per cent of the entire number of births.

CHART I



*Birthplace.* Six hundred and twenty of the mothers (68.9 per cent) indicated Iowa as their birthplace, while only 37 (4.2 per cent) were born in foreign countries.

*Residence.* The patients were residents of Iowa, except for 47 (5.3 per cent) who lived in neighboring states and came to border cities for delivery.

*Previous children.* Primigravidas numbered



462 (51.3 per cent) while the parity of the multi-gravidas was as follows:

One previous child.....	235
Two previous children.....	86
Three to five previous children.....	80
Six or more previous children.....	36

Among the 62,351 cases available in the previous study for a determination of parity, there were 14,861 first pregnancies, 23.8 per cent. The greater tendency to subject primigravidas to abdominal delivery is easily explained by the fact that pelvic contraction, the most frequent indication for cesarean section, would undoubtedly be detected during the first pregnancy.

*Indications for operation.* The most frequent indications for abdominal delivery were contracted pelvis (22.8 per cent), previous cesarean section (13.3 per cent), placenta praevia (11.9 per cent), and delayed labor (10.1 per cent). In general the indications were adequate but in certain instances there was some doubt concerning their validity. "Lack of cooperation by the patient," "To clear up the pelvis," "Acute appendicitis," "Pyelitis," "To effect sterilization," "Locked twins" with the patient not in labor, "Patient's request," "Dead baby, unable to start labor," "Patient's fear of labor," "Elderly primipara" with the patient aged twenty-eight years, and "Occiput posterior" with no other complication, would scarcely receive general approval.

*Previous cesarean sections.* Previous abdominal deliveries had been effected in 123 cases, but in three instances, some other complication dictated a second operation. Since cesarean section is more widely utilized to meet the minor complications of obstetric practice, it becomes inevitable that the importance of previous abdominal delivery as an indication will increase, and that many of these repeated operations will be performed in the absence of any other indication. These data show this trend:

Year	Total No. of cesarean sections	Repeated cesarean sections No.	Per cent
1930 .....	225	17	7.6
1931 .....	314	45	14.3
1932 .....	361	61	16.9
	900	123	13.7

*Type of operation.* The classical operation was performed about seven times as frequently as the low (cervical) cesarean section, in spite of the proved superiority of the latter when the patient has been in labor for any considerable period.

*Associated operations.* In 49 cases, other abdominal procedures were carried out in conjunction with the cesarean section. The performance of sterilization by procedures designed to interrupt the patency of the tubes, by hysterectomy, or

by salpingectomy is generally approved, but myomectomy and appendectomy are commonly thought to add too greatly to the risk always inherent in abdominal delivery.

*Time of performance of the operation.* In spite of the fact that, other conditions being equal, the safest time to perform cesarean section is before the onset of labor such elective procedures constituted only one-half of the cases reported. One hundred and sixteen (12.9 per cent) of the patients had been in labor for more than twenty-four hours, the operation being performed finally as an emergency measure with an inevitably increased risk. The membranes had not been ruptured in 731 cases (81.2 per cent), but in 66 cases they had been ruptured for less, and in 39 for more than twelve hours. All available evidence points to a rapidly increasing risk after the "bag of waters" has broken. In 37 cases (4.1 per cent) various attempts at vaginal delivery had been made, in spite of repeated warnings from all authorities that such efforts make the risk of abdominal delivery almost prohibitive. A similar but somewhat smaller risk accompanies attempts to induce labor, which was carried out by various procedures in 33 cases (3.7 per cent).

FATE OF THE MOTHER

*General.* Among the 900 mothers, 63 died, a total mortality rate of 7.0 per cent. During the three years of the study, there was a gradual improvement in the maternal mortality rate, which indicates a growing appreciation of the risk of the operation and of the proper indications for its performance.

Year	Total No. of cases	Deaths	Mortality per cent
1930 .....	225	20	8.9
1931 .....	314	23	7.3
1932 .....	361	20	5.5

*Effect of age and parity.* According to Chart 1, the risk of the operation is materially increased after the age of thirty-five years. The most logical explanation for this increased mortality in women approaching the end of their childbearing period is obtained from a study of the death rates according to parity.

No. of previous children	No. of cases	Deaths	Mortality per cent
None .....	463	32	6.9
One or two.....	321	21	6.5
Three, four or five.....	80	6	7.5
More than five.....	36	4	11.1

There is a strong probability that the complications, which dictate abdominal deliveries in women who have previously borne a number of children, are more serious in character, and that such women are poorer operative risks.

*Indications for operation.* The two most com-

mon indications for abdominal delivery carry the lowest mortality risk, contracted pelvis (1.0 per cent), and previous cesarean section (3.3 per cent). In these instances, it is fair to assume that the operations were more elective in nature and that all the advantages of early, planned interference were present. On the other hand, the highest mortality rates prevailed when the indication was developed by an emergency, delayed labor (8.8 per cent), eclampsia (19.0 per cent), abnormal presentations (11.6 per cent), diseases and malformations of the genital tract (22.6 per cent), and premature separation of the placenta (17.6 per cent). It should also be emphasized that elective operations performed for doubtful indications are not without danger, occiput posterior (3.6 per cent), and elderly primiparity (7.1 per cent). It is obvious from these data that cesarean section is not a reasonable method for attacking such minor obstetric problems.

Indications for operation	No. of cases	Maternal deaths	
		No	Per cent
Contracted pelvis.....	205	2	1.0
Previous cesarean section.....	120	4	3.3
Placenta praevia.....	107	4	3.7
Delayed labor.....	91	8	8.8
Eclampsia.....	84	16	19.0
Non-convulsive toxemia.....	67	4	6.0
Abnormal presentations.....	34	4	11.6
Diseases and malformations of genital tract.....	31	7	22.6
Previous difficult labors.....	29	1	3.4
Occiput posterior.....	28	1	3.6
Disease complications of pregnancy.....	24	3	12.5
Premature separation of placenta.....	17	3	17.6
Elderly primipara.....	14	1	7.1
Previous stillborn children.....	12	1	8.3
Miscellaneous.....	37	4	10.8

The high death rate in eclampsia is noteworthy since the best obstetric opinion of the day opposes the use of abdominal delivery in this disease. The rate in placenta praevia compares favorably with that to be expected after more conservative vaginal procedures, but it should be remembered that abdominal delivery for such fortuitous indications subjects the patient to the probability of a repeated cesarean section if she becomes pregnant again.

*Type of operation.* The low (cervical) operation appears to be safer than the classical procedure.

Type of operation	No. of cases	Deaths	Mortality rate
No data.....	6	0	0.0
Classical.....	783	54	6.9
Low (cervical).....	103	4	4.0
Various.....	8	5	62.5

The last group, "various," should strictly not be included because it comprises three vaginal cesareans, four postmortem operations, and one full-term ectopic gestation. However, the five deaths in these eight cases serve to raise the mortality rate for the entire series only from 6.5 to 7.0 per cent.

*Associated operations.* It is generally agreed that the performance of other abdominal operations in association with cesarean section increases the risk to the patient. There were 49 such associated procedures, with a mortality rate of 10.2 per cent. Simple sterilizations probably add little to the mortality rate, but such operations as myomectomy are not advisable. Among the four myomectomies performed in this series there were two fatalities. If it is advisable to attack uterine myomata, hysterectomy is safer and should be chosen, since extirpation of the uterus (cesarean hysterectomy) generally makes for a more favorable convalescence.

*Obstetric situation.* Other things being equal, it is safest to perform cesarean section before the onset of labor, when the membranes are unruptured and no vaginal examinations have been made, although it is evident that the character of the indication may alter the situation. In this series 445 patients were operated upon before the onset of labor with 33 deaths, (7.4 per cent), while among 444 patients who were in labor at the time of operation there were only 29 deaths, (6.5 per cent). A further analysis of the data, however, indicates that there was a tendency to operate before the onset of labor in certain groups of cases which inevitably carry a high mortality risk—eclampsia, and disease complications of pregnancy. Hence, the apparent safety of cesarean section performed upon patients in labor must be discounted. The same situation obtains in respect to preliminary vaginal examinations. The mortality rate in those examined vaginally is identical with that in the patients not examined, but again there was a definite tendency to operate for certain indications which in themselves carry a high mortality rate without preliminary vaginal manipulation, a fact which obscures the inherently greater risk if vaginal examinations have been made.

Previous rupture of the bag of waters increases the risk, irrespective of indication.

Time of rupture of the membranes	No. of cases	Deaths	Mortality rate
No data.....	36	1	2.8
Not ruptured.....	731	48	6.6
Less than 12 hours.....	66	6	9.1
More than 12 hours.....	39	5	12.8
Indefinite period.....	28	3	10.7

Unsuccessful attempts at vaginal delivery ad-



mittedly increase the risk of subsequent cesarean section. Such attempts were made in 37 instances with 9 deaths, (27.0 per cent). Moreover, previous attempts to induce labor, particularly by packing the vagina and cervix, and rupture of the membranes, augment the risk significantly. Thirty-three such attempts were recorded with seven deaths, (21.2 per cent).

When death follows cesarean section, it usually occurs during the first week.

Time of death after operation	Number	Per cent
First day .....	18	28.6
Second and third days.....	14	22.2
Fourth to seventh days.....	14	22.2
Second week .....	9	14.3
Later than second week.....	8	12.7
	63	100.0

The indicated causes of death did not permit of direct tabulation because of variations in nomenclature, but it was possible to allocate the apparent etiologic factor into certain general groups.

Allocation of cause of death	Number	Per cent
Infection, sepsis .....	29	46.0
Eclampsia, toxemia .....	12	19.0
Shock .....	8	12.7
Hemorrhage .....	5	8.0
Pulmonary embolism .....	4	6.3
Miscellaneous, one each.....	5	8.0
	63	100.0

The predominance of infection as a direct cause of death was to have been anticipated, since sepsis is recognized as the chief danger in abdominal delivery. In only seven instances, (11.1 per cent), was the ascribed cause of death confirmed by necropsy. Among 721 cases with available data on the course of the temperature after operation, 321 (44.5 per cent) had temperatures above 100.4 degrees F., and were classified as febrile. The most common non-fatal complications were wound infection (4.2 per cent) and thrombophlebitis (3.1 per cent).

GENERAL DATA ON THE CHILD

*Number of twins.* Because of the presence of sixteen sets of twins there were 916 children born to the 900 women who were delivered by cesarean section.

*Sex.* With the sex of two children unspecified, there were 486 males and 428 females, a ratio of 114 to 100, as contrasted with a ratio of 107 to 100 in the entire number of births during this three-year period. In the previous study, it was noted that operative delivery is more commonly necessary when the child is a male, and it was suggested that the greater birth weight of males may be responsible.

*Maturity.* The maturity of nine children was

not recorded, but of the remaining 907, 134 were specified as premature, (14.8 per cent). Birth weights were recorded in 756 instances, with 99 children weighing less than 2,500 grams (the usual criterion for prematurity), a prematurity incidence of 13.1 per cent. In the entire series of the previous study premature children represented 5.3 per cent of the total.

*Legitimacy.* There were fifteen illegitimate children, 1.6 per cent, as against 2.1 per cent in the whole series of births.

FATE OF THE CHILD

*General.* Sixty-four children were stillborn (7.0 per cent) and 86 died during the neonatal period (9.4 per cent).

*Maturity.* Among premature children (birth weight less than 2,500 grams) the stillbirth rate was 6.1 per cent and the neonatal death rate 34.4 per cent, while 4.3 per cent of the mature children were stillborn and 3.7 per cent died after a few days. It would seem from these data that cesarean section is remarkably inefficient as a means for conserving child life, a fact which has recently received attention. The total death rate of mature children is three to four times that commonly reported for series of vaginal deliveries.

During the three years included in this study there has been a considerable improvement in the total fetal and infant death rate, indicating a more reasonable choice of indications.

Year	Stillbirth rate	Neonatal death rate	Total death rate
1930 .....	7.0	12.8	19.8
1931 .....	9.4	7.8	17.2
1932 .....	4.9	8.7	13.6

*Fetal anomalies.* Twenty-four fetal anomalies were recorded, including nine cases of hydrocephalus and one of anencephalus the presence of which could have been detected by preliminary roentgenograms. It is difficult to justify the performance of abdominal delivery in such cases, because in the first instance craniotomy is the recognized method of delivery, and in the second, easy spontaneous birth may be expected. It is also probable that in certain of the twin births, the presence of multiple pregnancy was unrecognized before operation, and that its recognition might have altered the decision to operate.

*Cause of stillbirths.* Among the stillborn children only two autopsies were reported and the causes of death as stated on the death certificates were not suitable for direct analysis; however, an attempt was made to allocate the etiologic factors from the information available.

Allocated cause of stillbirth	Number	Per cent
No data .....	1	1.5
Eclampsia, toxemia .....	16	25.0
Asphyxia .....	15	23.5
Premature separation of placenta....	8	12.5
Birth injury .....	8	12.5
Placenta praevia .....	7	11.0
Hydrocephalus .....	6	9.5
Prematurity .....	2	3.0
Anencephalus .....	1	1.5
	<hr/> 64	<hr/> 100.0

Very probably certain of the "asphyxia" cases should have been included under "birth injury," since intracranial hemorrhage is by far the most common cause of stillbirth.

*Causes of neonatal deaths.* There were only five autopsies reported among the 86 infants who died shortly after birth, but from the available data, the deaths were allocated as follows:

Allocated causes of neonatal deaths	Number	Per cent
No data .....	2	2.3
Prematurity .....	49	57.0
Intracranial hemorrhage .....	24	27.9
Maternal eclampsia, toxemia.....	6	7.0
Asphyxiation .....	3	3.5
Hydrocephalus .....	2	2.3
	<hr/> 86	<hr/> 100.0

#### SUMMARY

Nine hundred cesarean sections in Iowa during 1930, 1931, and 1932 were associated with a maternal mortality rate of 7.0 per cent, and a fetal and infant death rate of 16.4 per cent. Within the three year period, there was a considerable improvement in both directions so that in 1932 the maternal mortality was 5.5 per cent and the stillbirth and neonatal death rate, 13.6 per cent. The low (cervical) operation, which may be expected to show a lower mortality than the classical operation, especially when abdominal delivery is effected after a period of labor, was not employed as widely as it should have been. The largest single cause of maternal death was sepsis (puerperal infection), which directly caused 29 fatalities (46.0 per cent), and was probably a factor in four additional deaths (6.3 per cent) from pulmonary embolism. Rupture of the membranes before operation, previous attempts to induce labor, prolonged labor, and unsuccessful attempts at vaginal delivery appear to be the chief predisposing factors in the development of fatal infection. Eclampsia and non-convulsive toxemia were responsible for twelve deaths (19.0 per cent), and shock and hemorrhage for thirteen fatalities (20.7 per cent). The total stillbirth rate for the three years was 7.0 per cent and the neonatal mortality rate 9.4 per cent, a total of 16.4 per cent. There has been a significant improvement from 19.8 per cent in 1930 to 13.6 per cent in 1932, but

the wastage of child life is still too great, particularly in view of the fact that abdominal delivery is so frequently advanced as a life saving procedure.

#### CONCLUSIONS

Cesarean section carries a considerable mortality even in selected cases, and when employed as an emergency procedure the risk is prohibitive. The fetal and neonatal death rates are appalling when it is considered that the operation is frequently chosen with the belief that it will conserve child life. Better results may be expected only when the indications and contraindications for the operation are better recognized, and it is understood that cesarean section is not a safe emergency procedure.

#### Discussion

**Dr. Roy E. Crowder, Sioux City:** The improvement which we see over the state is something to be thankful for; however, I feel that we are not yet appreciating the indications for cesarean section. As we know, there is only one absolute indication for cesarean section, and that is disproportion between the fetus and the mother. We have come to recognize certain other indications, under proper obstetric conditions, in which abdominal delivery may be done. Among those are heart disease in which there has been a decompensation. A compensated heart throughout pregnancy is not an indication for abdominal delivery. There are other chronic conditions, such as pulmonary tuberculosis and chronic Bright's disease. All of these patients may be delivered abdominally under local anesthesia.

There are two other conditions, one of which may be done for the sake of the child, and the other usually for the sake of the mother, and those are the hemorrhages of late pregnancy, placenta praevia and the premature separation of the placenta. Central placenta praevia may be and now is considered an indication for abdominal delivery provided that we have a live fetus. Premature separation is advisable if the fetus is alive, if the mother is in fair condition, and if it is impossible to deliver from below without a great deal of shock to the mother. There are certain cases of premature separation in which we are not certain of the condition of the uterus, and if the mother is in good condition or is put into good condition, abdominal delivery may be done to determine whether or not it is advisable to do a hysterectomy at that time.

I feel that, if we will take into consideration our definite indications, not allow our patients to go into labor when we feel there is something wrong which may be best remedied by cesarean section, and use good obstetric judgment, our maternal and infant mortality rates from cesarean sections will be materially decreased.

**Dr. Plass, closing:** I am very grateful to Dr. Crowder for having indicated the acceptable indications



for abdominal delivery, while I was concerned more particularly with those things that should not be done. Certain things stand out in the latter group. First, cesarean section is not a good method of treating eclampsia. There was a mortality rate of nineteen per cent among the eclamptic patients treated in this fashion. Many of these lives would have been saved had conservative procedures been adopted. Second, cesarean section is not a good method of treating prolonged labor with difficulty in delivery. The risk is too great for the mother and the results for the child are very poor.

It is, however, a source of considerable encouragement to everyone interested in these problems to note that the situation in Iowa is definitely improving. We hope within the next month to begin a survey of the next three-year period, and I am very hopeful that the study will show still further improvement for the mother and the baby. There is an inherent risk in cesarean section. There is a level below which we cannot, I think, reduce the mortality rate, but we have not yet reached that point, and it is something for which to strive.

### THE AMBULANT TREATMENT OF HERNIA\*

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So much has been written on the subject of hernia that it seems as though the last word has been said; yet when an analysis is made of statistics as to cure, there is a difference in results that varies anywhere from one to twenty per cent. A recent article by Bissel and Andrews states that the results in the surgery of direct hernia are so bad as to constitute a major surgical scandal, and further, that when one considers that the recurrences are far more dangerous than the original hernias, it seems high time that the subject was thoroughly reconsidered. Interest has been manifested at various times in regard to the ambulant treatment of hernia, but it has never become popular. As early as 1880, Billroth made the statement that if anyone could obtain a solution that would cause the artificial proliferation of tissue, the radical surgery of hernia would be solved. It is my object here to present opinions and impressions with results to date, gained from experience with the ambulant treatment of hernia, practical and experimental, in cases treated at the University of Minnesota, together with private cases.

Various solutions have been used in experimental work on dogs and rabbits, as well as in practical application to patients. Before treating any patients, colored novocain solution was used to inject the internal inguinal ring, and it was surprising to note how this solution could be deposited around the internal inguinal ring with the technic

to be described. Thuja solution was the first used. The formula and preparation will be given with the technic. Pina Mestre solutions were used. Injection of rabbits with Pina Mestre solution, put up by a drug firm in this country, according to the formula given for Pina Mestre solution, produced necrosis and was not used on patients. With the original Pina Mestre solution there was a marked proliferation of tissue with foreign body giant cells. A solution consisting of a distillate of the tinctures reported to be in the formula for the original Pina Mestre solution was used. To this was added tannic acid in standardized strengths, varying from .15 to one per cent, as well as thymol, .5 per cent; and benzol alcohol, three per cent. This produced a histologic reaction which could not be distinguished from the area injected with the original Pina Mestre solution. A number of dogs were injected using fluid extract *Pinus Canadensis* in alcohol and phenol, in strengths of one, three and ten per cent. These are the basic drugs in Mayer's solution. These produced necrosis, abscess, and in one dog, peritonitis and death. Pina Mestre solution is supposed to consist of a group of vegetable tinctures which do not have a standardized strength of tannic acid, two of the drugs not belonging to the United States Pharmacopeia. Several different strengths of an aqueous tannic acid preparation were used, varying from one-half of one per cent up to five per cent. Because of the burning that results from the injection of a tannic acid preparation, various local anesthetics, novocain, nupercain and benzol alcohol were used. This eliminated the burning pain, but a large percentage of these patients would have symptoms of an acute coryza on the following day. This did not occur in all cases, but it was present in so many that it was discontinued. This was thought to be due to the fact that tannic acid did not exist in colloidal form in the synthetic preparation and was more rapidly absorbed, thus causing toxic symptoms.

Microscopic reports of specimens after injection show a marked proliferation of fibroblasts with these dipping down between the muscle fibers. This, according to Dr. Bell, produces a binding effect. There was no infiltration of polymorphonuclear cells or any evidence of necrosis, except in the rabbits injected with Pina Mestre solution put up according to the formula as previously mentioned. Here fifteen minims were injected at weekly intervals and at the end of six weeks necrosis with marked infiltration of polymorphonuclear cells and lymphocytes was present. No giant cells were found. Sections where a tannic acid preparation was used showed a denser fibrosis than sections with the Thuja mixture. Sections in which

\* Presented before the Linn County Medical Society, Cedar Rapids, February 14, 1935.

the injection was made close to the peritoneum or just within the peritoneal cavity showed no evidence of abscess or necrosis, but a similar picture. The omentum was adherent to the abdominal wall, and there was so much proliferation of fibrous tissue that the peritoneum was completely obliterated. Results of injection below the fascia of dogs and rabbits showed a marked proliferation of fibroblastic tissue with no evidence of necrosis. There was no necrosis or infiltration of polymorphonuclear cells. However, polymorphonuclear cells are present when proliferation is first noticed, which is about the fourth day. Sections after injection into the peritoneal cavity showed no evidence of abscess, but a similar picture. The omentum was adherent to the abdominal wall, and several loops of intestine were matted together. There was no evidence of necrosis present. Sections from dogs injected with the original Pina Mestre, as well as the distillate of the drugs contained in the formula, showed a reaction which could hardly be differentiated, one from the other, except that the section from the original Pina Mestre solution showed better developed foreign body giant cells. There was no late infiltration of polymorphonuclear cells or necrosis in these specimens.

Fraser and Hall at Bellevue Hospital and New York University injected a few hernia cases in 1929, and carried out experimental work on monkeys and dogs. For this they used the Pina Mestre solution. Their results showed a swelling and edema in ten days. Examination of the indurated areas showed a vigorous proliferation of endothelial and connective tissue cells, plus large mononuclear phagocytes and foreign body giant cells. Two specimens showed traces of the injected substance in the abdominal muscles of the monkey and the omentum of the dog. In this latter, two sections of the tissues from the monkey showed an extensive mechanical rupture and necrosis of the muscle fibers. There were masses of yellow granules engulfed by large multinuclear giant cells. It also showed marked proliferation of fibroblasts with some lymphocytes and plasma cells. There were a few areas of multinucleated regenerating muscle cells and single myelocytes. The omentum showed reddish granules and multinucleated giant cells, some single reticular cells and marked proliferation of fibroblasts.

There are several contraindications to this method. All types of hernias are not amenable to this type of treatment. Postoperative or incisional hernias usually have adhesions or incarcerated abdominal viscera and no definite sac, and should not, as a rule, be so treated. Incisional hernias usually have one hernia that can be diag-

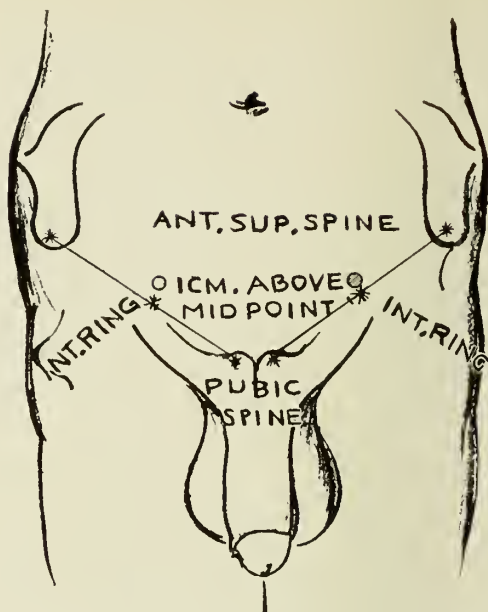


Fig. 1. Sketch showing the location of the internal inguinal ring, which is approximately 1 cm. above the mid-point between the anterior superior spine of the ileum and the spine of the pubis. This varies according to the size of the hernia, so that in a very large inguinal hernia where the defect in the transversalis fascia is greater, the ring will extend lower. This location is above the line between the two spines and not along the line.

nosed, but have several potential hernias along the line of the incision. When there is a very small incision, a definite opening can be determined, and the contents can be reduced and held reduced by a properly fitting truss, this hernia can be so treated. Hernia associated with an undescended testicle, incarcerated or irreducible hernias, should not be injected because of the danger of strangulation. These are distinct surgical conditions. Hernias that can be reduced, but where the symptoms cannot be completely relieved by proper application of a truss, are surgical. Sliding hernias should not be so treated. It is very doubtful if a sliding hernia can be held reduced by a truss. To begin with, I was skeptical about treating direct hernias, but the results to date in direct hernias are just as good as in the indirect inguinal type. Any general surgical contraindication, such as hyperthyroidism and hemophilia should always be considered a contraindication. Laying aside the contraindications we may state that any inguinal hernia can be treated provided that it is reducible and can be held reduced by a proper fitting truss. Although a few femoral hernias have been treated with good results, I believe there are likely to be complications, especially in large hernias. Several epigastric hernias have been treated with good results. At the outset no umbilical hernias were treated, but with improved truss pads, they can be handled. Very often in femoral, umbilical or epigastric hernias, there is a fat pad in the sac. Ap-



plication of a truss in these cases causes pain, and should not be done unless there is absolute and complete relief of symptoms.

To begin this work, it is absolutely necessary to know how to fit a truss in order to hold the hernia reduced. The pad of the truss should fit over the inguinal ring, thus holding the hernia contents within the abdomen. One type of truss will not fit all individuals. The best truss that I have yet found is a spring type of truss. When properly fitted, the patient can engage in almost any form of exercise or work. Trusses are usually fitted low, and very often give relief, but when so fitted they do not hold the hernia reduced except in direct hernias. They cause the hernia contents to press outward against the fascia of the external oblique, and this causes a resultant fraying or thinning out of the fascia as well as an enlargement of defect in the transversalis fascia. The spring type of truss is not always suitable for a patient with rounded or feminine type of hips. Here an ordinary elastic type of truss is satisfactory. The requirements are that the truss stays where it is put, keeps the hernia retained by a constant firm and continuous pressure and prevents protrusion of any abdominal contents. It is necessary to watch patients regularly to see that the truss fits, since a perfect fitting truss today may be worthless within a few weeks, if a patient loses any great amount of weight. The measurement for the spring type of truss is taken about two centimeters below the

crest of the ilium, with the end of the tape brought down to the symphysis pubis, or it can be taken directly around the body at the level of the buttocks. The two measurements are usually about the same. Cooperation on the part of the patient in wearing a truss is absolutely essential, otherwise failure is the result. Several patients have been successfully fitted with a truss, and treated only after the patient has been placed on a reducing diet, thus reducing the intra-abdominal pressure. Reduction in weight in patients with hernias cannot be too strongly emphasized. Large scrotal hernias can often be held reduced after having a patient in bed for several days with the foot of the bed elevated, and then treating the case daily for three days to a week. For umbilical hernias, the best form of a truss is a hard pad which fits into the depression and is held in place with an elastic binder wrapped around the body several times. There should be two thin plates over the pad which fits into the depression. The first plate should come to the inner edge of the rectus abdominis muscle and the outer plate should come to the junction of the outer and median third of the muscle. This is a definite improvement over any previous truss or binder used for this type of hernia.

The objections which have been mentioned to this type of treatment should be considered. Paraffin injections can be dismissed without further discussion, for it is a well established fact that the method resulted in very few permanent cures. It caused irritation from the foreign body present, and required surgical interference for its removal and the closure of the hernia. The fact that it has been only in the hands of quacks is not a good argument, for it is not so many years ago that reputable medical men were severely criticized for the injection of hemorrhoids or varicose veins, and today they are both accepted and recognized. The so-called Timmerman treatment by alcohol should be discarded because of the large number of injections required, and the fact that numerous complications have resulted. The fact that irritating solutions cause discomfort and pain sufficient to incapacitate patients has not been substantiated. It is true that some patients will have a greater reaction than others, but very few suffer sufficiently to incapacitate them from heavy work. Another objection is the fact that a truss must be worn for a long period of time. A properly fitting truss is of no more inconvenience than a good fitting glove, after the first few days. I think it can be safely stated that 80 per cent of all hernia cases are wearing trusses at the present time, and that only one out of ten trusses holds the hernia reduced. It has been stated that this is a blind and not a rational procedure. To them I may reply that there is a

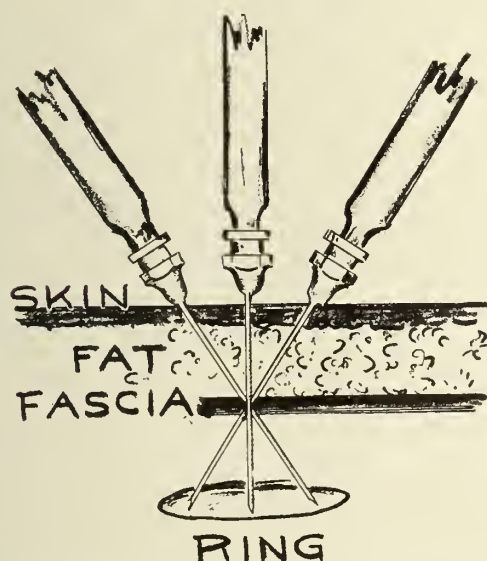


Fig. 2. Sketch showing the injection of the internal inguinal ring. The needle is introduced directly through the skin, fat and fascia of the external oblique muscle. As the needle penetrates the fascia, there is a distinct "give" feeling. Very little experience is needed to determine this location. As the needle is introduced slightly further, depending upon the thickness of the abdominal wall, it will approach the region of the internal inguinal ring. When the needle is in the proper location, the syringe can be rotated in a circle, thus giving free rotation of the tip of the needle. This can be very easily demonstrated by the injection of colored novocain solution, preparatory to operating upon a hernia.

definite technic and unless this is learned, great harm may result.

A number of complications have been mentioned, hydrocele, epididymitis, sepsis, strangulation, sterility, peritonitis and abscess. There has been swelling of the cord in a few cases, and this has usually occurred toward the end of the treatment but has caused no serious disability. Only rarely can fluid be aspirated from a hydrocele of the cord. This will be absorbed and will cause no serious result. Only an occasional patient will suffer sufficient reaction to incapacitate himself, and this is only for a few days at most. There has been no atrophy of the testicles noted at this date. Whether this is going to be a later complication and result in sterility will be proved only after a lapse of years. It is surprising how many cases of atrophy of one or both testicles are found present when these cases are first examined. I wish to mention two patients who had a hydrocele with their hernia. At the beginning of treatment, the fluid would gravitate into the abdomen when the patient was lying down. Both these patients had a 50 per cent atrophy of the testicle when first seen. After application of the truss and treatment, there has been no recurrence of the hydrocele and one of these cases, when last seen, showed a 75 per cent normal size of the testicle. Another argument is that there is not a strong abdominal wall. A number of patients have developed hernias on the healthy side after cure was effected on the diseased side. The time elapsed since this treatment was begun is too short as yet to arrive at any definite and final conclusions as to this. One patient who was treated, and about a year later died of an attack of influenza, was autopsied by the pathologist at the Midway Hospital. This showed a perfect closure of the internal ring and inability to force even a finger through this region. One patient in which there was some question about the contents being completely reduced after the second treatment, was operated upon. He had received one treatment at the internal ring and one treatment at the external ring. At operation, the sac was completely obliterated and was not found.

The course in cases treated after injection shows an induration in the region of the injection. This is usually tender to pressure on the day following treatment. Usually after two to four treatments there is sufficient exudate or plastic tissue formation to prevent protrusion of the viscera even without the truss. There have been a few cases where a swelling of the cord resulted, but this usually subsided in a few weeks. Hot packs relieve the pain when present. The external ring shrinks in size and the fascia can be felt to thicken, so that at the end of a few weeks the external ring will

not admit the tip of the index finger. This usually begins after two injections at the external ring. There has been no infection in any case. Cases where a tannic acid mixture was used, would occasionally complain of general malaise or chilly feeling as if they had a cold, on the following day. Practically all patients mention the great relief obtained as soon as they are fitted with a truss and had two or three treatments. There is less soreness and pain from the distillate mixture than from either the Thuja or Mayer's solutions, and this seems to give quicker results than any of the other solutions.

There are several advantages to this form of treatment, the principal one being that it is ambulatory and that the patient continues working. He is not confined to the hospital for a period of two weeks, and he is not incapacitated for another period of four to eight weeks, and one cannot doubt

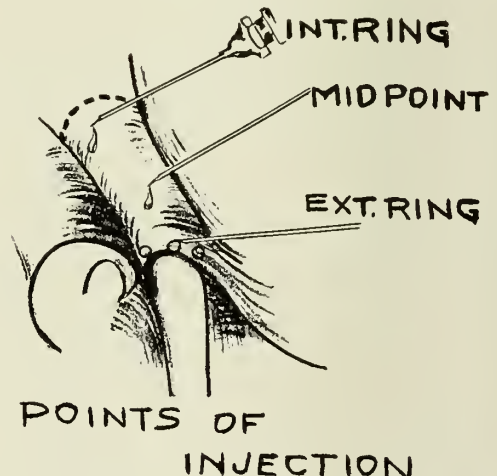


Fig. 3. Sketch showing various points for the injection along the inguinal canal. The solution should always be deposited below the fascia and not superficial to the fascia. Several points should be injected, as per sketch, at the external ring. The needle point should be within the external ring so that none of the solution filtrates into the subcutaneous fat, as, when this happens, there will be a hard nodule present. The needle should not go so deep as to injure the cord.

that the economic issue is of greatest importance at the present time. We know that recurrences of hernia following surgery occur much more often than statistics show, for hernias will recur as long as fifteen to eighteen years after the operation, and it is most difficult to obtain a check for an accurate percentage of recurrences. I do not believe that the recurrences will be as high with this type of treatment as they are with surgery, especially if the cases are watched every two months for a period of two years. However, the incidence of recurrence is higher than that given by the men who have reported this work in the medical journals. A number of patients who had been operated upon began to show signs of weakening and beginning



recurrence. They were fitted with a truss and treated, and a recurrence of the hernia was prevented. I believe that the recurrence of hernia following operation can be practically prevented, provided that the patients are fitted with a truss and compelled to wear it for a period of time after the operation. The case should be supplemented by injection treatment if there is any suggestion of recurrence.

The technic is not difficult when the anatomy of the parts is known. After the patient has been fitted with a truss, and this has been worn for a period of several days to a month to be certain that the truss fits the individual, and holds the hernial contents reduced, treatment can be started.

The formulas for solutions which we have been using to date are as follows:

#### Thuja Mixture

Phenol .....	50 parts
Alcohol .....	25 parts
Lloyd's specific tincture of Thuja.....	25 parts

Allow to stand two days and then either decant or filter.

#### Mayer's Solution

Zinc sulphate .....	1 dr.
Phenol crystals .....	6 dr.
Glycerin .....	4 fl. dr.
Aq. Cinnamomi .....	1 fl. oz.
Fl. extr. pinus canadensis (dark) .....	5 fl. dr.
Sterilized chemically pure redistilled water..	2 fl. oz.

Dissolve the zinc sulphate in the cinnamon water. Liquefy the phenol crystals by heating. Add the glycerin. Shake thoroughly until mixed and cooled; then add the distilled water and finally the fluid extract of pinus canadensis. Shake thoroughly. Allow the fluid to stand for about a week, agitating the mixture several times a day. Subsequently it should be filtered. Before injecting, boil the solution in a glass tube.

Pina Mestre solution consists of several vegetable tinctures, the basic drug being tannic acid. The distillate mixture which is labeled Proliferol, is a distillate of several vegetable tinctures to which tannic acid has been added, in strengths of .25 to one per cent.

The technic for treatment where the Thuja mixture or Mayer's solution is used, is to begin with two to five drops of Thuja mixture, injected at the internal ring. Injections are made about twice a week, depending upon the reaction of the individual. If there is much reaction the duration of time between the injections is lengthened. After several injections in the internal ring there is usually sufficient plastic exudate so that the hernia does not come down, even when the truss is removed. After beginning the treatment the patients are advised to wear the truss day and night for at least thirty days, or until we are certain that there is sufficient organization to hold the hernia contents within the abdomen. Injections are also given at several points along the hernia

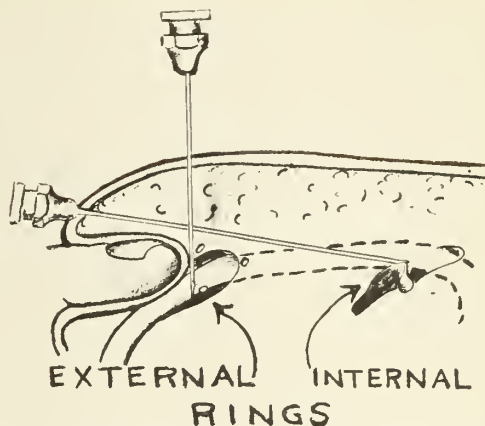


Fig. 4. The internal ring can also be injected by introducing a 3 inch needle through the external ring, and passing it forward along the inguinal canal to the region of the internal inguinal ring. After passing the external ring it is carried forward to about  $1\frac{1}{2}$  to  $1\frac{3}{4}$  inches. There is, however, more danger of injuring the cord with this technic. Femoral hernias can be injected very easily by placing the tip of the finger in the femoral canal, and then injecting the solution immediately below the tip of the finger. Not over two or three drops should be injected at one time in femoral hernias. As a rule, not over three or four injections are necessary to obliterate a femoral hernia.

canal, just beneath the fascia, just inside the external ring, and in Hesselbach's triangle. For the injection of Hesselbach's triangle, the needle is introduced inside of the cord and posterior to it, depositing the solution upon the conjoined tendon or the transversalis fascia. The type of syringe most satisfactory is the ordinary insulin or tuberculin syringe with a size twenty-two gauge needle. For the distillate solution, a five cubic centimeter syringe is the best.

The Thuja solution can be injected usually to a quantity of eight drops, whereas with the zinc sulphate solution two to six drops are usually sufficient. The number of injections required to close the hernia varies. A few patients have received good results after only four treatments, although as many as twenty injections have been given to patients with large scrotal hernias. It is much better to give more treatments and be sure of a good closure. There is more reaction or soreness with the Thuja solution than with the distillate mixture. However, the Thuja solution produces more proliferation than the other solutions.

With the distillate mixture or Proliferol, the treatment is started at the internal ring. We have altered our technic as we gained more experience and knowledge of the subject. Injections are started at the internal ring. First, two cubic centimeters of two per cent novocain solution without adrenalin, is injected at the site to be treated. The needle is left in place for several minutes before the Proliferol solution is injected. Aspiration should always be attempted before injection is made, in order to be sure that no blood vessel has been entered, otherwise complications may result.

No more than two or three cubic centimeters of the solution should be given at the first treatment, and where the stronger solutions are used, not over three should be used at any time. Injections should also be made at the external ring and along the canal below the fascia. Hesselbach's triangle should be treated in all indirect inguinal hernias, to protect the patient against a direct hernia. It is preferable to treat these patients every other day or twice weekly, although they can be treated daily with good results. There is much less after pain or soreness with this solution than with the other solutions. The treatment should be continued until the entire inguinal canal is filled with a plastic exudate which becomes indurated and hard, and until no impulse is present. It is not advisable to have the patient strain and cough until it is fairly certain that the hernia is obliterated. Occasionally there will be swelling of the cord, but this does not contraindicate treatment at that time. The swelling always subsides in a few weeks. In direct hernias the region of the internal inguinal ring should be injected to guard against the development of an indirect hernia. Where there is a very large external ring, Thuja solution is often used in combination with the distillate mixture.

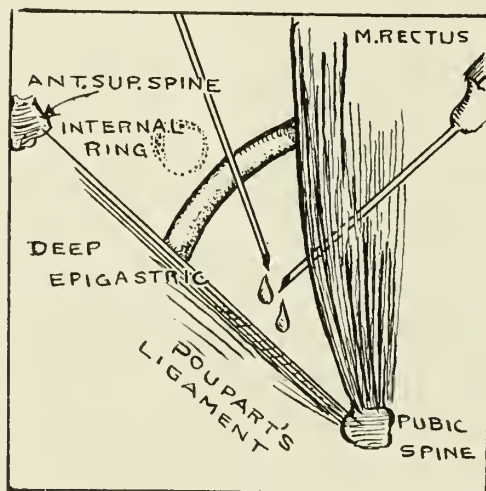


Fig. 5. The technic for the injection of Hesselbach's triangle. In the case of direct hernias the needle can be slid along the outer edge of the rectus abdominis muscle or can be entered into the triangle lateral to the rectus abdominis from above. In this manner the triangle can be injected without injury to the cord.

Here the region of the internal ring is injected with the distillate mixture and the Thuja solution is injected at the external ring below the fascia. At the next treatment, the Thuja solution is used at the internal ring, and the distillate mixture at the external ring. Only half the usual amount should be used when treating in this manner.

A recent check up of cases shows 707 hernias treated. About ten per cent of these cases are the

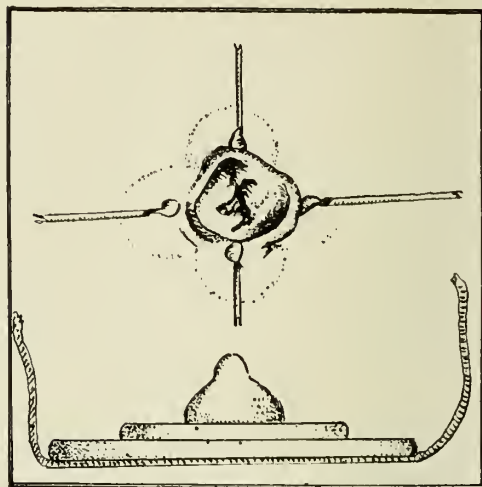


Fig. 6. Method of injection of umbilical hernias. Novocain should first be used as injected in inguinal hernias, only in a smaller quantity. Not over 1 to 1.5 c.c. should be injected at a time at various sides of the hernia. The needle should reach down to the edge of the fascia.

Cross section of an umbilical pad showing cone shaped truss pad which fits into the hernia opening and then two pads which support this. After this pad is put in place, it is held in place by an elastic bandage wrapped around the abdomen several times.

direct inguinal type. Umbilical and femoral hernias are included in the list. The recurrence of hernias following operation is running lower than at our first check up, but it still shows seventeen per cent recurrent hernia after operation. There has not been a single recurrence that even approached the size of the original hernia after injection. Where cases have needed more injections as a result of impulse being present, these cases have been listed as a recurrence. At the present time this runs slightly above seven per cent. There have been only nine cases in which a closure could not be obtained. These were cases where surgery was advised, but refused. If recurrence, after five years, can be kept down from ten to twenty per cent, I feel that it will be very good when one considers the types and size of hernias that we are treating, as well as a number of cases where surgery is contraindicated, i. e., cases of bronchiectasis, chronic bronchitis, asthma, hay fever, and coronary disease.

The following instructions are given to every patient in regard to essentials in treatment:

1. The truss should be worn next to the body, removed in bed, and put on in bed.
2. All patients should wear their truss night and day for a month after treatment is finished.
3. If the truss does not stay in position, a strap fastened in front and back will hold it in place.
4. The pressure of the pad should produce a depression in the skin.
5. If the hernia becomes painful or if the pa-



tient is distressed by wearing the truss, he should report to the clinic for examination.

6. The hernia must be held back at all times by the truss.

7. The patient can continue his regular occupation, but if he does any heavy lifting, he should be sure that the truss is in the proper position.

8. The number of injections varies from eight to sixteen.

9. The truss should be worn six months after the last injection.

10. At the end of this period the patient should return for a check-up.

11. It is also well for the patient to report for examination every two months for about two years.

12. If at any time a recurrence develops, the patient should return for examination, or notify us to that effect.

#### CONCLUSIONS

1. It is a safe and effective method in eradicating certain types of hernias, if proper technic is used, but there is danger of complications if details are not followed.

2. It demands the cooperation of the patient in the proper wearing of the truss.

3. Knowledge of the fitting of trusses and the technic of the injection is absolutely essential.

4. Recurrence of hernia can almost be eliminated by combined forms of treatment.

5. Patients who are incapacitated and have a definite surgical contraindication can be so much relieved as to pursue a gainful occupation, and in many cases a cure can be effected.

6. Complications as mentioned have not been substantiated to date by clinical cases.

7. This method brings the mechanical treatment of hernias, where necessary, from the hands of those who know little or nothing of diagnosis, pathology and anatomy, into the hands of physicians who should know this form of treatment.

#### AMEBIASIS\*

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Prior to 1933 amebiasis claimed only occasional attention and then only from parasitologists or physicians in the south or tropical countries. Despite the efforts of writers on this subject it required a major epidemic to bring to the attention of medical men in general the fact that amebic infestation has a world wide distribution.

Losch in 1875 in Russia was the first to find amebae in a patient with dysentery. Osler in

1890 first demonstrated amebae in the stools of a resident of the United States. Osler's patient had dysentery and abscess of the liver. Further instances of North American amebiasis were reported by Stengel in 1890, and Musser and Dock in 1891. In 1903 Schaudinn differentiated pathogenic from nonpathogenic amebae. He named the former *Endamoeba histolytica*, and the latter *Endamoeba coli*.

Since that time a finer division has been made. At least four nonpathogenic species are now recognized, namely: *Endamoeba coli*, *Endolimax nana*, *Iodamoeba buetschlii*, and *Diendamoeba fragilis*.

Walker and Sellards in 1921<sup>1</sup> proved beyond any reasonable doubt that *Endamoeba histolytica* was the causative factor in the production of amebiasis. They recovered cysts and motile forms of *Endamoeba histolytica* from symptomless carriers and fed them to twenty volunteers. Eighteen became parasitized in from one to forty-four days. Only four of the eighteen men developed dysentery. The symptoms appeared twenty, fifty-seven, eighty-seven and ninety-five days respectively after ingestion of the material. The time between the appearance of amebae in the stools and the onset of symptoms was nine, fifty-six, seventy-six, and ninety-four days respectively. This experiment shows the variability of the incubation period and indicates that the cysts of symptomless carriers are a potential menace to others.

Since the incidence of liver abscess is higher, and the tendency to dysentery greater in hotter climates, than in more temperate ones, and because the response to treatment is variable, Brumpt declared that there were two species of quadrinucleated cysts nearly identical with *Endamoeba histolytica* which were less pathogenic. He named these *Endamoeba hartmani* and *Endamoeba dispar*. He believed that these forms were more common in northern climates and thus accounted for the variability of the symptoms. This theory has received recent support in the work of Meleney and Frye in Tennessee<sup>2</sup>. They used five strains of *Endamoeba histolytica*: two from the hill district, and three from the lowlands. The cases in the hill district were mild and those in the lowlands more acute. Their observations in 364 kittens indicated that strains of *Endamoeba histolytica* from different localities may show differences in the incidence of infection and in the amount of pathology produced in experimental animals. All strains however showed some degree of pathogenicity for kittens. Removal of most of the bacteria from the cultures greatly decreased the incidence of infection with all strains<sup>3</sup>. Koch and Reed<sup>4</sup> report a case in which large and small trophozoites

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were present. When the larger forms disappeared, under treatment, dysentery stopped. The smaller forms remained, forming cysts, and were thus more resistant to treatment. The authors, however, ascribed the case for the present as caused by a peculiar variant of *Endamoeba histolytica*.

Opposed to this theory of difference in pathogenicity are Craig's views. He quotes Walker and Sellards' results from symptomless carriers previously mentioned. Craig also states that Philippine soldiers who had severe amebic dysentery improved when sent to the United States, while the mortality was higher among those who remained in the Islands. Craig reiterates his view that, "the occurrence of symptoms in amebiasis depends very largely, if not entirely, upon the amount of resistance of the infected individual to the infection, rather than upon differences in virulence between different strains of *Endamoeba histolytica*".<sup>5</sup> Kessel was unable to confirm Brumpt's work and is in agreement with Craig's viewpoint<sup>6</sup>. The question of variability of strains remains unproved and is one of the moot questions of amebiasis which may be settled by future investigations. Wenyon's advice on this point is pertinent. "In the presence of morphological similarity or uniformity, difference in physiology must be well proved and clearly established before it can be made the basis of a new species"<sup>7</sup>.

The incidence varies with the climate, sanitation, soil contamination and other factors. Survey results depend upon the expertness of the examiner and the number of stool tests made on each individual. An excellent summary of the numerous studies of the incidence of amebiasis may be found in Craig's recent book<sup>5</sup>. It is generally conceded that between five and ten per cent of the general population of this country harbor cysts of *Endamoeba histolytica* in their stools. In Iowa it is impossible to estimate the number of deaths due to amebic dysentery, because of the incomplete death records. Through the efforts of Dr. A. V. Hardy, of the University of Iowa, and Dr. A. A. Johnson, of Council Bluffs, a survey was made of the amebic dysentery carriers in Pacific Junction, Mills county. One hundred and fifty persons were examined, and in five cases cysts were found<sup>8</sup>. This does not give the true incidence, because only one stool examination was made on each individual.

*Endamoeba histolytica* exists in three forms, namely: the pre-cystic stage, the cyst, and the vegetative motile trophozoite. Due to the acidity, the trophozoites, if ingested, are readily killed in passing through the stomach. The cysts, however, resist the action of the hydrochloric acid and pass

on into the small intestine where excystment takes place<sup>9</sup>. The four nuclei form eight active motile trophozoites which colonize in the large intestine by means of binary fission. These trophozoites lodge in the mucosa, giving off a cytolyzing substance which destroys the intestinal epithelium permitting the organism by its ameboid activity to penetrate the submucosa. Secondary infection completes the process forming a punched-out ulcer with an undermined edge. Perforation does not occur frequently, because the process is slow enough to permit formation of adhesions. Healing of the ulcers occurs with considerable scar tissue formation. Amebae may be found in the venules, and thus are in a position to be carried to the liver to form an abscess, one of the common complications of amebiasis. If conditions are not suitable for propagation of the trophozoites, they change to a pre-cystic stage and finally form cysts which are excreted with the formed stools.

Most authorities have accepted the work of Dock, Musgrave and Bartlett that *Endamoeba histolytica* cannot exist in the intestine of man without producing at least mucosal lesions, however microscopic they may be in some instances<sup>10</sup>.

In considering the symptomatology of amebiasis, it is of vital importance to remember that dysentery is only an occasional feature of the disease.

Due to the variability of symptoms there are numerous classifications of clinical cases. Symptoms, according to Simon,<sup>9</sup> depend upon:

1. The relative virulence of the organism under variable conditions.
2. The reaction of the host to the infection involving the element of indigenous or acquired immunity.
3. The location of the active lesions and the extent of the involvement of the structures of the large bowel.
4. Concomitant or secondary invasion with bacterial organisms.

This author classifies the cases as follows: first, an acute, severe dysentery with colicky pains, tenesmus and passage of many stools containing mucus and blood; second, a less virulent acute type occurring as a relapse in chronic cases; third, a low grade chronic colitis, characterized by mild exacerbations and relatively long periods of quiescence; fourth, apparently symptomless carriers; and fifth, atypical cases presenting symptoms such as secondary anemia, weight loss, vague digestive disorders, backache, and abdominal pains suggesting lesions of the appendix or gallbladder. Suffice it to say that amebiasis seldom presents a characteristic picture, diagnosis being made by



having a high level of suspicion leading to identification of the amebae in the stools.

The diagnosis can only be made with certainty by observing the trophozoites in fresh, warm dysenteric stools, or in fresh, warm liquid stools following the taking of a saline cathartic, usually magnesium sulphate, or the finding of cysts in formed stools. Magath<sup>11</sup> believes that one must examine at least six formed stools, or three liquid stools to diagnose approximately one hundred per cent of the cases. James<sup>12</sup> claims that one formed stool examination uncovers about one-third of the actual number of cases, three examinations one-half to two-thirds, and six examinations up to about ninety per cent. Dobell believes that where the health of the patient is at stake it is almost better that no examination at all be made than that it should be made by an incompetent or inexperienced person.

The laboratory identification and differentiation of the various amebae will not be considered here.

Proctoscopic examination is helpful in diagnosis, in that amebic ulceration is frequently characteristic showing an undermined ulcer with mucosa between the ulcers in contradistinction to ulcerative colitis wherein the entire membrane is involved. X-ray examination while not diagnostic was suggestive in 68.7 per cent of 215 cases according to Brown<sup>13</sup>. Culture methods have been used occasionally since the development of satisfactory culture media by Boeck and Drbohlav. The complement fixation test devised by Craig<sup>14</sup> in 1927, has been used with very satisfactory results especially in symptomless carriers. The chief drawback is the difficulty in preparing the antigen. Weiss<sup>15</sup> recently reports an improvement in this test in that it is more sensitive, and the preparation and titration of the antigen are simplified.

In the differential diagnosis one must consider, according to McCoy,<sup>16</sup> appendicitis, colitis, ulcerative colitis, bacillary dysentery, cholecystitis, hepatitis (in cases of amebic involvement of the liver), intestinal malignancy, duodenal and gastric ulcer, intestinal tuberculosis, pleural effusion (in cases of liver abscess), and typhoid fever.

Heading the list of complications<sup>17</sup> is liver abscess. This occurs in about twenty-five to fifty per cent of cases coming to autopsy, but occurs in a very small percentage of cases when one considers the large number of persons harboring *Endamoeba histolytica*<sup>5</sup>. Abscesses in the lung, brain, spleen and other organs of the body have been reported. Perforation of an amebic ulcer with resultant peritonitis may occur. Fatal hemorrhage from vessel erosion has been observed several times by Craig<sup>18</sup>. Amebic appendicitis has been

reported by Dry<sup>19</sup> and others. A late complication or sequella of amebiasis is narrowing of the intestinal lumen due to adhesions and scar tissue formation which may lead to intestinal obstruction.

Transmission of the disease has been very aptly described by Magath<sup>11</sup> as the old question of the excreta of one human being finding its way into the food and drink of another. The trophozoites passed by patients in the acute stage are not harmful as they die in passing through the stomach, but the cysts are relatively resistant and may live for some time unless exposed to drying. Water transmission through defective plumbing was definitely admitted to be the cause of the majority of cases in the recent Chicago epidemic<sup>20 and 21</sup>. Magath, and Hardy and Spector, have offered further evidence supporting the theory of the water transmission of amebiasis<sup>22</sup>. Flies were established as a vector in a Texas epidemic by Craig<sup>5</sup> in 1916. Fresh vegetables fertilized with infected human excreta are a potential hazard. Food-handlers harboring *Endamoeba histolytica* have been considered a very serious menace, and were thought to be the source of many cases<sup>23</sup>, although recent work has tended to discredit this theory. Spector and Buky<sup>24</sup> report that following excessive fouling of the hands, the number of cysts to survive beyond five minutes was very small compared to the number killed, and it was exceptional that any survived longer than ten minutes. Spector, Foster, and Glover<sup>25</sup> checked the hands and finger nails immediately after passage of an infected stool, and found only 6.8 per cent positive. They believed that this number would have been even smaller if the subjects had been permitted to wash their hands. Andrews<sup>26</sup> contaminated the space beneath the finger nails, and found few cysts survived more than two minutes, and that ordinary hand washing was sufficient to free the hands from infective material. McCoy<sup>27</sup> states that carriers, even among food-handlers, do not appear to be an important source of infection. Brown and Magath<sup>28</sup> are in accord with this viewpoint.

The prophylaxis of amebiasis is the prevention of food and drink contamination<sup>18</sup>. This can be accomplished by the following means:

1. Provide a safe water supply with approved plumbing and toilet facilities.
2. Avoid use of human excreta in fertilizing material.
3. Use care in the preparation of raw fruit and vegetables where such fertilizing is practiced.
4. Keep food screened from flies.
5. Boil water if suspicious. To kill cysts chlorine must be one hundred times as strong as

ordinarily used, which would make the water unfit for drinking.

6. Possibly food-handlers in public eating places should be examined, and those found infected should be treated.

#### TREATMENT

In 1912 emetine was introduced by Rogers and Vedder as a specific for amebic infection. It has since been found to cure only about one-third of the cases. Its use has been reserved for acute cases in which it has a remarkable effect. The dosage is one grain daily subcutaneously for ten to twelve days. Brown<sup>29</sup> advocates peak dosage by giving two-thirds to one grain (0.043 to 0.05 gm.) twice a day for three days with an interval of a week before repeating. One must remember that emetine is a protoplasmic poison<sup>30</sup> capable of causing marked diarrhea, myocardial injury, and degeneration of motor fibers simulating a peripheral neuritis. If toxic effects are noted, treatment should be discontinued immediately.

Emetine bismuth iodide was next introduced for oral administration, but reports have not been favorable<sup>31</sup>.

In 1922 stovarsol (acetarsone) and treparsol, pentavalent arsenical preparations, were introduced for oral administration. They have been used in acute cases with good results. Both drugs have produced toxic effects evidenced by erythema, which may progress to an exfoliative dermatitis. Deaths have been reported with both drugs<sup>31</sup>. Flandin<sup>32</sup> recommends emetine daily the first week, followed by treparsol .25 grams (four grs.)<sup>0</sup> four times daily four days each week for one to two months. He reports good results in 80 per cent of his patients thus treated. Brown<sup>29</sup> prescribes treparsol, in tablets .25 grams (four grains), eaten with each meal for four days, and gives two or more such courses with a ten day rest period between courses. This drug is used in conjunction with emetine in acute cases, and also in chronic and carrier cases.

Carbarsone was introduced by Anderson and Reed in 1931. It is said to be less toxic than acetarsone and a more efficient amebicide<sup>5</sup>. Neither this drug nor any arsenical should be used in cases of hepatitis. The dosage recommended by Anderson and Reed is .25 grams (four grains) twice a day for ten days and repeated in ten days. It may also be used as a retention enema daily for five days using 200 cubic centimeters of two per cent solution of sodium bicarbonate, containing one per cent carbarsone.

Chiniofon, also known as yatren and anayodin, was introduced in 1921. It contains twenty-six to twenty-eight per cent iodine. It is said to be

non-toxic in therapeutic doses. The dosage is one gram (fifteen grains) by mouth three times daily for eight to ten days. The course may be repeated after an interval of seven to ten days. Daily enemas containing two per cent solution may be used in combination with oral treatment. Therapeutic dosage may produce a severe diarrhea. If this occurs, a smaller dose should be used.

Vioform is a recently introduced drug containing from 37.5 to 41.5 per cent iodine. Few toxic symptoms have been reported. The dosage is .25 grams (four grains) three times daily for ten days, followed by a rest interval of ten days before repeating the course.

In acute cases with dysentery or severe diarrhea, emetine with one of the arsenicals or iodine compounds is the plan of treatment most commonly used. Bed rest and low residue diet are advised in these cases.

In carrier and mild cases the arsenicals or iodine compounds alone are recommended.

#### CONCLUSIONS

1. The evidence in favor of the existence of variable pathogenic strains is not adequate to establish this theory.
2. Diagnosis is dependent upon a high level of suspicion and demonstration of amebae in the stools.
3. Water transmission has become a major factor in epidemics.
4. The menace of food-handlers has been overestimated in the light of recent studies.
5. Treatment with the newer drugs is effective in the majority of cases.

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### Discussion

Dr. Albert V. Hardy, Iowa City: Dr. McQuiston has given a most adequate review of the available literature on this subject. To this I can add nothing.

The detailed report of the investigation of the Chicago outbreak of amebic dysentery has not yet been published. The study has been completed, and the report will soon be made available in one of the publications of the United States Public Health Service. Possibly a few points which have come out during the course of study of this epidemic may add to this report. Dr. McQuiston called attention to the variable incubation period and also to the fact that our knowledge on this subject was based upon the illness which developed in four persons who were experimentally fed *Endamoeba histolytica* cysts. During this epidemic we were able to obtain highly reliable data on the incubation period on almost 500 cases. We found that the most common incubation period was surprisingly short, about twelve days, that about two-thirds of the illnesses began within one month of exposure; that beginning illness during the third month after exposure was unusual and, during the fourth month, very rare. I recall two cases with illness beginning in the fourth month in which there had been no intestinal symptoms whatever, but the onset included symptoms of liver abscess.

The difficulty in the diagnosis of amebic dysentery became very clear as a result of the experience in this epidemic. On about 230 cases we obtained reports of the erroneous diagnoses which were made. It was surprising that in about one-half of these, surgical conditions were diagnosed, appendicitis, cholecystitis, malignancy, hemorrhoids and a variety of others. This was particularly important in view of the great hazard in the surgical treatment of these patients, particularly if the intestinal tract was involved. Appendectomies were reported in thirty-two cases, with the outcome fatal in 41 per cent. We

were surprised, also, to find that in the fatal cases, malignancy was the most common erroneous diagnosis.

Concerning treatment, may I add one word? We have become convinced that carbarsone is a highly effective and valuable addition to the specifics which are available for the treatment of this condition which at any time we may encounter in practice in Iowa.

Dr. McQuiston, closing: I appreciate the excellent discussion by Dr. Hardy, and I was very glad to have him point out the dire effects of surgical intervention in acute cases, as illustrated during the last two years, following the Chicago epidemic.

### FARM ACCIDENTS\*

RANSOM D. BERNARD, M.D., Clarion

Emergency treatment of farm accidents embraces the same principles employed in the treatment of automobile or industrial accidents. An enlightened rural population, and safe and rapid transportation over hard surfaced roads, have made this statement possible. Only a few years ago the rural physician was called to see the patient regardless of the severity of the injury. Today this is the exception. In only the most severe injuries, when fear for the patient's life prompts the call, is the physician summoned; at all other times the patient is immediately placed in a car and brought to the office or hospital for treatment. In spite of the depression the farmer of today will accept hospital treatment far more readily than he did even ten years ago, and there are few communities in which hospital facilities are not available. This has given the local surgeon the same opportunity to treat shock, the all-important factor in serious injuries, with the same skill and ease as the city physician. This factor, plus the appreciation of the farmer for the necessity for this type of treatment, has reduced mortality and disastrous infections to a marked extent. Even ambulance service is now available in most small communities.

My efforts to obtain data from the literature concerning this subject have not met with success. State boards of health, our own in particular, have not given this subject serious attention. In traveling about the state during the past eight months I have had an unusual opportunity to contact rural physicians. To a large and representative group of these men I have "put" the following questions:

Are rural accidents on the increase? (Ans.) No.

Where are you treating your accident cases? (Ans.) In the office or hospital.

Are you using antiseptics? (Divided answers)

\* Presented before the Eighty-fourth Annual Session, Iowa State Medical Society, Davenport, May 8, 9, 10, 1935.

My personal impression is that the men who are treating the greater number of accidents are depending less on antiseptic treatment than ever before. The high pressure drug salesman is all too often a factor in the choice of antiseptic used.

Is the age of the patient a factor? (Ans.) Yes. Farm accidents include the very young and aged. Industrial accidents involve the younger adult and early middle age; while the automobile takes its greatest toll from early manhood and womanhood. Hence, farm accidents include two groups that handle trauma badly—extreme youth and old age.

What machine and what animal produce your most serious injuries? (Ans.) Corn picker and bull.

These facts, which I believe represent a true picture of present-day Iowa, are not verified by Legee in his survey of occupational hazards in the agricultural industries, in the *American Journal of Public Health*, for April, 1935. He states that in California, in 1933, of 7,914 non-fatal accidents reported, agriculture stood first; in fatal accidents, agriculture ranked third. He found that in Nebraska, in 1929, fatal farm accidents were twice as numerous as in manufacturing industries.

"In Kansas during the same year, of the 159 agricultural deaths, twenty-two were due to non-auto vehicular accidents, eighteen from farm wagons and four from hay racks; twenty-five were due to animals; electricity took a toll of thirty-seven victims, eight of these being struck by lightning. Of 83 drownings, five occurred in stock tanks. Forty-nine persons were killed by special farm machinery. In Nebraska and Kansas 145 fatalities were caused by tractors."

In checking a typical group of rural Iowa counties for a period of fifteen years I found that farm accidents constitute 36 per cent of all accidents; that fractured skulls cause the greatest loss of life; that burns rank second; that fractured hips vie with drowning for third place; and that monoxide gas is becoming an increasingly important factor. The records of one county revealed that fifty years ago farm accidents constituted 50 per cent of all accidents. Mechanical machinery and electric power have reduced the farmer's hazard 14 per cent. It is also interesting to know that of the total number of suicides in these same counties, 41.5 per cent were farm suicides.

Almost any type of accident may now occur on a farm. Thirty years ago animals as a causative factor rated high. With the advent of mechanical equipment and motorized transportation, the ani-

mal as a cause was reduced to second place. Protective devices on machines plus a greatly enlightened farmer are the two elements which have reduced accidents to the low level they occupy today.

I elect to divide farm accidents into major and minor groups.

#### Major

1. Those causing death or serious permanent injury
2. Those causing mutilating injury, but with fairly satisfactory results
3. Burns
4. Eye injuries
5. Unusual accidents.

#### Minor

1. Slight injuries from which very serious infections result
2. Slight eye injuries.

Under the first group, accidents causing death or serious permanent injury; skull fractures head the list, the most common causes of which are: kicks of animals (of late years the cow has exceeded the horse as a causal factor); falls from buildings, hay stacks, loads of hay, hay mows, and horses; falling trees; falling buildings; and machinery causes, such as the exploding of a cream separator, and being caught in the belt of a gas engine. An overwhelming percentage of skull fractures are fatal. If not killed outright, the farmer dies from resulting infection. The total number of rural skull fractures over a long period of years, however, is small as compared with other industries in which the risk is as great. Bulls either gore or trample their victims to death. The damage they do is often a crushed thorax or torn abdomen.

The most *mutilating accidents*, that seldom kill, are those produced by the corn picker, the corn shredder, the disk, and the gang plow. The early corn picker and corn shredder, not adequately understood and therefore inexpertly handled, caused a shocking loss of hands, feet, arms, and legs. With the improvement of the machinery, and a realization by the farmer that a stick or fork could be used to clean the rollers, instead of his hands or feet, the number of accidents has been reduced to a marked degree. These accidents are always of the mutilating type; bones as well as soft tissue are destroyed, and the result is more or less dependent upon the inevitable infection.

The introduction of gasoline power has certainly reduced the number of serious disk accidents, although farmers still leave the tractor running while they attempt some repair to the



machinery. For some unexplained reason the clutch becomes engaged and the farmer is caught by the disk or binder. The ankles and lower legs are the parts most frequently injured. Amputation is usually unnecessary, but a stiff joint almost always follows.

Gang plow accidents usually result in a penetrating wound of the abdomen or chest. If not killed outright, the recovery is slow and the occupational handicap is great. You will note this difference in the last three types of accidents mentioned: the picker and shredder mutilate the part to such an extent amputation almost inevitably ensues; the damage done by a disk is great, but time and plastic repair ordinarily assure continued use of the member; and accidents involving the gang plow, if not resulting in death, are vocationally detrimental.

The farmer's wife and children suffer most from *burns*. Wash day, with its accompanying peril of children scalded with hot water, holds no greater hazard on the farm than elsewhere. Kerosene, however, plays an important rôle as a cause of very serious burns in the farm household. The use of this oil in starting fires results in far too many fatal accidents. Kerosene lamps are an additional menace. If not fatal, the disfigurement and permanent deformity are frequently serious. The introduction of the modern washing machine and the extensive use of electricity are both causal factors in effecting the diminution of the number of these accidents.

The farmer's *eyes* are still unprotected. He has developed no sense of preservation, either in protecting his eyes from direct trauma or by early consultation with his doctor after an eye injury. It is true that he will cover his eyes with an ill-fitting pair of goggles when working in a dusty field, but will be totally oblivious to the dangers of a foreign body until ulceration has advanced to an unbearably painful stage. Flying splinters of wood, penetrating wounds caused by nails, looking into a gasoline engine to see how it works, have been causes for immediate enucleation of the eye. Penetrating wounds of the eye caused by corn stalks are of all too frequent occurrence, and in about 50 per cent of the cases result in loss of the eye.

Deaths due to *smothering* (in oat bins), heat prostration, lightning, drowning (in water tanks or gravel pits), tornadoes, and monoxide gas from gas engines are of such rare occurrence that no elaboration is warranted.

Under the second classification, of minor accidents, the first subdivision is that of slight injuries from which very serious infections result. This

group constitutes the serious pyogenic infections resulting from: wire scratches; scratches received while handling animals; cuts while butchering; injuries received from machinery such as hay forks, washing machines, and electric motors; and to a lesser extent, animal bites. The probable reason that this group is as large as it is, is the farmer's unshaken belief in the antiseptic ointment purchased from the itinerant peddler. Propaganda in the rural schools is fast overcoming these antiquated ideas.

The incidence of *tetanus* is small, due to the widespread knowledge of its dangers. *Gas gangrene*, though relatively rare, is increasing. This is undoubtedly due to changing crop conditions. Beet fields and potato fields are sources of infection which will probably increase in number as we approach normal times. The experience of medical men with this infection during the war made these men more observant; hence fewer cases are overlooked. The cases I have seen have not resulted in loss of life because of three factors: early diagnosis; immediate use of large doses of serum; and prompt amputation. Prophylaxis was not used in any of these cases.

Under *slight eye injuries*, ulceration caused by foreign bodies such as small bits of emery, peat, or barley beads, is easily preventable, but usually these cases do not reach the doctor's office until very active treatment must be instituted. I believe I am safe in saying that the eyes of railroad employees are as safe today as those of the farmer.

#### TREATMENT

I am convinced that *shock* is of first importance in all serious accidents, whether they occur on the farm, on the highway, or in a factory. The treatment of this condition is so well established that it hardly seems necessary to take it up in detail here. Morphine, adrenalin, heat, normal salt solution, or glucose solution, may all be used in a country home by any well equipped rural doctor.

Time is another very important factor. Following the initial control of hemorrhage and the application of a sterile dressing, the patient must be placed in a bed and "warmed up" and kept warm. The physician should then watch and wait. The patient should be given a chance. If the loss of blood has been great, a blood transfusion is indicated. Here again, the doctor should be prepared to render bedside service. The technic has now been reduced to such simplicity that there is no excuse for sending to some distant city for aid. Cleansing with soap and water with the addition of a solvent if there is grease in the wound, débridement, suture of tendons and nerves, and primary closure is the treatment of

choice where *shock* is not a factor. If delay has been forced, the wound should be cleaned and left open for forty-eight hours; then closed, and reopened after healing, for repair of tendons and nerves. Primary antiseptics are avoided.

Any suspected bone injury demands careful x-ray examination, and simple fractures may be reduced at once under either local or general anesthesia. Seldom does a skull injury need immediate operation. Simple cleansing of the wound, with rest and supportive treatment until the danger of infection is past, will probably reduce the mortality rate in this type of case. Intracranial pressure should be checked by eye ground examination and by spinal puncture, and treated conservatively by restriction of fluids and the use of magnesium sulphate. Immediate immobilization is of utmost importance. This may be accomplished by the use of a pillow or the simple Thomas splints. In the event of infection hot moist packs and adequate drainage supplement immobilization. It is true that the various antiseptics, lysates, etc., have their place, but usually in selected cases. Long continued suppuration must be considered as a probable sign of a necrosing tendon or devitalized bone, and calls for surgical attention. It should always be borne in mind that the end result is most important. Partial flexion of the elbow or finger is much to be preferred to a straight, stiff joint. Of course early massage and manipulation of fractures is taken for granted, but whether this is indicated in the presence of infection is debatable. I am opposed to it.

Burns occurring on farms differ in no way from burns occurring elsewhere; neither does the emergency treatment of them; which is sedatives, sustaining the patient's resistance, maintaining the fluid balance, and applying the local dressing of choice.

I prefer to cleanse and inspect an injured eye after the application of a local anesthetic (either cocaine or butyn). This will permit the removal of a foreign body and the application of an antiseptic such as metaphen 1/2500, or mercurochrome 4 per cent. The eye is bandaged and usually an ice bag applied. This is one of the very few instances where I think the use of the ice cap is of any value. The average man practicing in a rural community will show good judgment in referring all penetrating wounds of the eye to a man doing this special work.

Inasmuch as a large percentage of the serious injuries involve *fractures*, the treatment of compound fractures starts with the warning given in the paragraph dealing with shock. The wound

is most certain to be infected. Hence, in its repair, provision for drainage must be made regardless of whether the part is splinted in the mechanical devices so commonly used, or in plaster. Rubber tubing, gutta percha tissue, or a wick of gauze are commonly used. I prefer a few twisted strands of heavy catgut, or even silk worm gut, in those wounds which are not left wide open. In dealing with any serious fracture consultation with another physician should not be overlooked. Immediate reference to a competent orthopedic surgeon is advisable if the fracture is one in which the fragments cannot be held in their proper relation. I do not feel that the use of a local anesthetic is indicated in many of these more serious accidents. The soft tissues are usually traumatized and have little resistance to infection. Complete relaxation with a general anesthetic is the anesthetic of choice.

I am seeing an increasing number of gas infections. To one who has had any army experience, the tip of the finger will be the quickest and surest way of making a diagnosis. The infections fall into two groups: those occurring from four to six hours after the accident; and those occurring at a later date. Treatment of the first group consists of an initial intravenous dose of gas antitoxin and immediate amputation through normal tissue, with follow-up doses of 20,000 units at six to twelve hour intervals, or often enough to control the rise of temperature.

The second group calls for the same antitoxin treatment accompanied by the radical opening, not only of the wound, but of all possible pockets in the muscles and tendon sheaths. Choice of a solution will depend entirely upon your own experience. I have tried Dakins, permanganate, peroxide, and plain hot packs with about the same results.

For *tetanus* the use of a prophylactic dose of antitetanic serum is accepted. Here again the infection falls into two groups. I believe it is generally recognized that a case arising within ten days of the injury, calls for heroic treatment. Whether sedative treatment or serum is employed, the mortality rate for this group still remains high. If the infection occurs after the tenth day, the patient usually recovers. At present the combination of the two, serum plus sedative, is probably wise, until the sedative treatment is better established.

The largest group of *serious infections* follows minor injuries. This is due to: first, serious injuries have immediate expert attention; second, minor injuries are neglected until the infection has invaded deeper structures and the lymph



stream; and third, the almost universal belief among farmers that a piece of fat pork or some antiseptic ointment has the divine power to prevent infection or heal wounds. Education of the farmer and his family, along first aid lines, will eliminate a very large percentage of these unfortunate cases. Details of treatment are identical with those cases resulting from industrial or automobile accidents. I wish again to emphasize that one must not lose sight of the patient. Maintaining and increasing body resistance, which includes rest, a nourishing diet, and possibly the use of foreign proteins, is more essential than the use of antiseptics and radical treatment at the site of the infection.

#### CONCLUSIONS

The farmer has an exceptionally safe job, considering the fact that he is constantly exposed to accidents from handling animals and machinery. He has educated himself to be careful, and the machinery of today is especially well guarded against the man who uses his hands instead of his head.

Eyes seem to be in constant danger. The corn picker rates highest as the cause of the most serious accidents.

Rest, prevention of shock, aseptic rather than antiseptic dressings, assumption that most wounds are infected and treated as such—all are important elements in treatment. Serious fractures and eye conditions should be handled by men especially trained to do so.

Antitetanic and anti-gas gangrene serum, not less than 10,000 units, should be used as routine measures.

The emergency treatment of farm accidents embraces the same principles employed in the treatment of automobile or industrial accidents.

#### Discussion

**Dr. Kenneth L. Johnston, Oskaloosa:** This gentleman's paper, to me, is interesting. One of the things that interested me most was the amount of ground he covered. My impression of farm accidents, and I gathered that he thought somewhat the same thing, is that they are either very trivial or very serious. We never see the trivial accidents until after the individual comes in with his infection. The serious accident covers an enormous range of territory.

One of my fellow practitioners recently had a patient who had fallen off a windmill. Apparently the things that can happen to you on a farm are legion. I was very much interested in what Dr. Bernard said about gas gangrene. It has always been a mystery to me as to why in Iowa we don't have more cases of gas gangrene. Those of us who were overseas in the war saw any number of cases.

In the fifteen years since the war I think I have seen two. I do not agree with the essayist on his ideas of treatment, both curative and preventive, of gas gangrene. We are told by the men who were doing research that gas gangrene is essentially a disease of the muscle. The sugar that happens to be in muscle tissue is apparently the pabulum that the gas bug likes best. We are not going to do any good for patients with gas gangrene by incisions; the only way we can cure gas gangrene is to find the involved muscle and take the whole muscle out, from its origin to its insertion. The use of serum is still somewhat problematic. I saw the first patients in Paris who were treated with serum. I think they were all treated too late. Some of them did get well, but most of them died.

In the American Ambulance service, in Paris I think we had, during the summer I was there, over 500 cases of gas gangrene. The mortality rate was tremendous. Why these farmers do not get it, I do not know; they should, considering their exposure. I do not think we give antitetanic serum as promptly and consistently as we should. We occasionally have a patient in our locality with tetanus and we always find that the man has been seen by his physician and has not been given a prophylactic dose of tetanus antitoxin.

Another type of farm accidents is that due to crushing bridges. The small bridges on secondary country roads are being forced to hold up heavy farm machinery and are going through. I have seen two or three men in the last two years who were seriously hurt going through bridges, riding some sort of a piece of moving machinery. The bridge caved in and the machinery fell on top of him.

Another thing that wasn't particularly brought out by the essayist is that practically every farmer now is using a manure spreader. Everyone who sees any great amount of injured people can remember two or three patients who have been injured by a manure spreader. While the injury does not kill them, it tears them very badly, and the danger from infection is great.

Practically every one of the mechanical devices used on the farm has a knife on it. We had a crop failure in our locality last year, and the men were cutting corn by fastening corn knives on sleds. I think our farmers called them cornsleds. I saw a lad who actually had fallen under one of those things and had cut off about half of his knee joint, the most peculiar injury I have ever seen.

In closing, I would like to emphasize again the importance of antitetanic serum. There may be some question as to the value of serum in cases of gas gangrene, but every victim of a farm accident should be given the advantage of antitoxin.

## AUTOMOBILE ACCIDENTS\*

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The possible fields for discussion, contained within the broad limits of my assigned topic, are, of course, legion; in selecting one type of injury to speak of briefly within my allotted time, I have chosen the so-called "bumper" or "fender" fracture, a fracture of the upper end of the tibia into the knee joint. I did this for two reasons; first, this fracture is not an infrequent one, and certainly the automobile is the mechanical agent of violence in a rather high percentage of cases, various observers reporting from 35 to 68 per cent of these upper tibial fractures being the result of motor accidents; either the pedestrian or the car occupant may be the victim, and it is a fracture which a great many of us will see and treat. My second reason for drawing attention to this injury is because of the potential factor of serious disability which may result, and the consequent importance of the best possible management from the instant the attending physician first sees the patient.

I shall not include in this paper any discussion of fractures of the tibial spines, upper tibial epiphysis (so-called Osgood-Schlatter's disease), or injuries to the semilunar cartilages, except briefly as they may be associated with, and complicate, condylar fracture.

Tibial condylar fractures fall into three groups:

1. Those involving the lateral condyle only.
2. Those involving the medial condyle only.
3. Those involving both condyles.

Any of these types may be complicated by contiguous wounds, by comminution of the fragments or by associated injury of adjacent bony, cartilaginous, or ligamentous structures. Fracture of the lateral condyle is by far the most frequent, but the medial condylar injury when it does occur, is the more serious. Wm. R. Cubbins, et al.,<sup>1</sup> have further subdivided these lateral condyle fractures as follows:

1. Fracture of the lateral condyle with the fragment displaced outwardly, but with little if any depression of the bearing surface; frequently complicated by dislocation of the lateral meniscus between the fragments; lateral condylar fragment usually comminuted.
2. The same fracture, with considerable depression of the bearing surface.
3. Fracture depression of the posterior portion of the lateral condyle, with the forward por-

tion intact. Always seen where there is associated fracture of the head of the fibula.

4. The reverse of the situation last mentioned.

A rather frequent complication is the presence of small fragments of bone and cartilage floating free in the joint fluid. We note Dr. Cubbin's frequent reference to the term, "*depression of the bearing surface*." Herein seems to lie the keynote of the hazard which threatens satisfactory end results in fractures involving the tibial plateau.

To recognize this "depression of the bearing surface," together with any other disalignment in the joint, must be the objective of each and every examination procedure; to restore accurately the bearing surface as nearly as may be to the normal, must be the objective of any method of treatment used.

"Restoration of the bearing surface" is, therefore, the one phrase of this paper which I hope is remembered, and to that end there will be some further consideration and possible repetition for emphasis.

The physical examination of tibial condylar fracture will show:

1. Swelling of the joint.
2. Localized tenderness over the point of bone or ligament injury.
3. Floating patella.
4. The elicitation of crepitus is unnecessary.
5. Marked loss of function with some deformity, this deformity being a genu valgum of varying degree.
6. Abnormal mobility.

The physical examination is to be aided, whenever possible, by x-ray study, concerning which I would like to say a word. Bear in mind again, that we are dealing with a fracture through a movable, weight bearing surface, which must serve as a fulcrum for the strain of heavy muscular leverage. The displacement of fragmentary portions of this surface may be in any combination of three planes; anteroposterior and lateral flat films, while helpful, may fail to show an important element of the distortion; stereograms are desirable, and if these can be made from four, rather than two, angles, so much the better. Stereoscopic films of the opposite normal joint also may be of great help for comparison. When all the x-ray evidence is in, let us not accept its verdict alone, but only as it is correlated with the deformity and the physical findings.

In discussing treatment of these fractures, I should like to make a few prefacing remarks. The open and closed methods of reduction each has a quota of enthusiastic exponents, depending on their bent, their technical facilities and skill, and

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the end results of cases in their hands. Personally, I have as much respect for a knee joint as the next man. I cannot, as yet, approach even the excision of a semilunar cartilage without an attack of goose pimples or some moisture of the brow. I fully appreciate the fact that once we have taken the bull by the horns, and actually opened a knee joint, anything short of a perfect end result will be laid at the door of what the public is pleased to call "the butcher's knife." The patients with these less fortunate end results never die; they exhibit their stiff, painful knees for years before our eyes and the eyes of the community at large. The method of attack, I feel sure, must be left to the individual physician, and his decision, based on his courage, his capacity to "take it on the chin," and in a large measure, on his "common horse sense," should not be criticized by anyone. I shall merely try to point out the high lights of both methods, leaving the pros and cons to following speakers, or to open discussion.

The method of closed reduction involves molding of the fragments into the best alignment possible, followed by immobilization in plaster. Some men like to tap the fragments into line with a mallet; others prefer to attempt the reduction manually; a third group use the "redresseur," a useful contrivance, consisting of two wooden or metal blocks, with curved, concave, opposing surfaces to fit the contour of the tibial condyles, attached to a threaded connecting bar, the pressure being applied with a turn screw.

Paul Swett, McPherson, and Pike,<sup>2</sup> advocate making use of the lateral ligaments as an additional aid in the reduction and maintenance of position; this maneuver is carried out simultaneously with the application of external pressure, by slowly extending the leg and forcing it into extreme varus, or valgus, to bring taut whichever lateral ligament lies over the displaced fragment; the leg is then immobilized in that position with ten to fifteen degrees of flexion. A combination of any or all of the above procedures, designed to meet the problem of the individual case, may well be used in the closed method.

In regard to the question of open reduction, Cubbins stresses the point that where the central portion of the bearing surface is crushed obliquely down, manipulation will be of no avail. This reasoning appears sound; I cannot conceive of successfully raising a comminuted, depressed, tibial plateau by external pressure applied from any angle. Surgery here means getting into the tibial head, levering up the depressed surface with an osteotome, restoring as accurately as possible the contour of the joint, removing all loose,

small fragments of bone and cartilage from the joint space, and packing the resulting wound in the tibial head with bone chips or plates to preserve the arch. A bone peg or screw will probably be necessary to hold the entire mass firmly. Depending on the degree of comminution, some period of delay may be advisable to obtain preliminary partial fusion of fragments, before attempting surgical elevation of the bearing surface.

Fractures involving both condyles are difficult to reduce and maintain by any closed method, and are certainly candidates for surgical consideration. Tibial head fractures practically always unite, and our concern is not so much, "Will bony union take place," but rather, "In what manner will bony union take place."

The paragraphs above merely suggest some phases of treatment. I shall appreciate hearing them discussed by men who have had an immeasurably greater experience in this field than I have had. I can truthfully say that I have no delusions of grandeur concerning my personal views, and present the subject with considerable deference.

In conclusion, I recapitulate the following points for consideration:

1. Fracture of the tibial head is becoming a not infrequent injury, and is often a result of motor accident.
2. An accurate recognition of the fracture displacement in all planes, and particularly the condition of the bearing surface, is absolutely essential to proper treatment.
3. Such recognition involves a careful correlation of the physical findings with adequate, stereoscopic roentgenograms of the injured part.
4. Restoration of the bearing surface, together with removal of torn or loose fragments in the joint, is essential for optimum results.
5. Depression of the bearing surface, and loose cartilage or bone fragments in the joint space, can best be handled surgically, in competent hands.
6. Closed reduction certainly has its place in selected cases.
7. The attending physician must make his own decision as to method, with honest consideration of the many variable factors, in each individual case.

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### Discussion

Dr. F. L. Knowles, Fort Dodge: In discussing this very important paper of Dr. Files' there are very few things that can be added. All of us probably have seen cases which are of especial interest because of certain things that we have or have not, been successful in handling. I want to speak of two general things, which may be of interest. One is a case where I found a patella crushed clear into the center of the joint, with a very extensive comminution of the entire articular surface of the lower end of the femur, so that the width of the joint was about five inches across, after the patella was driven into the center of the joint. I opened this joint and took out about half a handful of small bone chips. Then, reassembling the larger portions, which seemed to be capable of living, I pinned them with small chrome nickel steel pins, countersinking them under the articular surface of the patella, much the same as you would accumulate one of these jig-saw puzzles. There was so little bone left, it seemed almost hopeless to expect any type of functional joint. This was in a very heavy set elderly gentleman. Today he has ninety degrees of motion in that joint.

I speak of this simply to emphasize Dr. Files' point that it really is up to the judgment of the doctor working on the case as to what can or cannot be attempted. I do not think we should hesitate at any time to go to extremely radical means to save a joint which otherwise would be an absolutely useless one.

Many men here may not agree with me on the second thing I wanted to mention, but it has proved very beneficial to me in handling the knee joint. It has been my observation in several cases where patients with excessive fluid within the knee joint, after treatment for as long as four and five months, that aspiration of the knee joint and the discontinuance of all other treatment, caused a large number of these conditions to clear up spontaneously. From that observation I believe that tight bandaging of the knee joint is a definite detriment to the outcome of these patients. As long as there is any tearing or stretching of any of the synovial membrane of the capsule of the joint, excessive fluid will continue to be thrown out. Binding these joints simply increases the tension within the joint, causing further stretching and further fluid, and you have established a vicious circle which, if the tight bandaging is continued, the joint will not clear up. I simply speak of that because, perhaps, some of you men might begin to observe it. It would be my advice that in a great many of these cases the tight bandaging of the knee joint is not advisable but in many cases is a definite detriment to these injured knees clearing up.

## INDUSTRIAL ACCIDENTS\*

HAROLD A. SPILMAN, M.D., Ottumwa

I accepted the invitation of the genial Chairman of the Section on Industrial Accidents with a great deal of nonchalance, a feeling which proved to be unjustified the further I got into the subject, since there are so many angles to industrial accident work.

There is a very great difference between ordinary accident work and industrial accident work, for several reasons: One is the mental attitude of the employee which is influenced very definitely by the compensation laws. Another factor influencing industrial work is the effect of the attitude of the various foremen in viewing the situation from the angle of production and continuation of work of employees; so that it becomes a rather complex subject. The importance of industrial surgery has been growing in the minds of the medical profession in recent years. It has acquired a place in the sections of the American Medical Association, and we are devoting attention to it ourselves in our State Society. Among the first to pay special attention to industrial accidents were the railroads. One reason for this early manifestation of interest was the Interstate Commerce Commission. As those of you who do railroad work know, an accident which results in an employee losing more than three days from his work is what they call a reportable accident. This requires a special investigation and report to the Interstate Commerce Commission. This has reacted beneficially on the accident rate, but it has also resulted in some evils, because the railroad officials have gone to extremes to prevent the reporting of accidents. I have even known instances in which an employee was continued on a duty status with another employee to do such parts of his work as he was unable to perform, simply to prevent a "Reportable accident." That is foolishness, yet it occurs; but the rule has materially reduced the rate of occurrence of railroad injuries.

The safety program has reduced the amount of disabilities resulting from accidents, by discouraging unsafe practices. Just recently I had an opportunity to review a five-year study of the medical department of a large industrial plant, for the years from 1930 to and including 1934. In 1930, with an average number of 1,818 employees, 463 employees required medical attention. That is practically one in four, one in 3.93 to be exact. Of these 463 employees requiring attention, 177 were lost-time accidents; that is, they

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lost one day or more from their work. Of these, 22 resulted in partial permanent disability and one in total permanent disability. In 1931, with an average number of 1,787 employees; 406 required medical attention, one in 4.4; including 193 lost-time accidents, 22 partial disabilities and one total permanent disability. In 1932 there were 1,743 employees, with 443 requiring medical attention, one in 3.93; 148 lost-time accidents, with 16 partial disabilities. In 1933, with 1,848 employees, there were 488 employees requiring attention, one in 3.78; 138 lost-time accidents, 19 partial disabilities, and one total permanent disability. In 1934, 2,032 employees, 567 employees requiring medical attention, one in 3.58, with 142 lost-time accidents, with 14 partial disabilities. You will note that throughout those five years there was about one in every four of the employees requiring medical attention, and there was a definite relationship in lost-time accidents. For 1932, 1933 and 1934, it was possible to show the rate of lost-time accidents per million man-hours worked. For 1932 it was 34 accidents per million man-hours, for 1933 it was 32; and for 1934 it was 31, showing a definite decrease.

Another interesting fact that these statistics showed was the group of employees that we refer to as accident-prone employees. During those five years' time there was a total of 1,449 employees requiring medical attention. Sixty-three of those employees had six or more injuries, varying from six to sixteen in number. An analysis of those accidents showed many of them to be preventable by proper attention on the part of the heads of departments.

An analysis of these accidents shows a certain type of grouping. Infections are divided into two groups: those in which the original injury was promptly reported, and those in which it was not. They will vary from two to one to three to one, in numbers. For instance, in 1930 twenty-six infections occurred, which were not promptly reported, and fourteen which were. In 1931 the totals were thirty-seven and thirteen; in 1932, twenty-two and ten; in 1933, twelve and four; and in 1934, eighteen and nine. Cuts, bruises, sprains, fractures, hernias, back injuries, burns and the miscellaneous group, comprise the remainder of the cases.

Infections form a very important group of cases in industrial accidents. If we can control those cases, we will materially reduce the disabilities resulting, the time lost and the cost of administration of the medical department. In the final analysis, the only way that we as doctors can talk to the average industrialist is to show him

where proper medical and surgical attention affects his pocketbook.

A group of cases extremely interesting to any man dealing with industrial cases where edged tools are handled, is the group of cuts involving tendons, especially the flexor tendons of the fingers. I have talked to a great many men who are doing this work and have studied not only my own records at this industrial plant for the last two years that I have had it, but for three and more years before. I believe that we obtain satisfactory repairs of the cut flexor tendons when they occur near the distal end of the fingers, in about one in four, in spite of using every aseptic precaution that we can. That is not a very good result. It is hard to tell why it is so poor. If it were myself alone, I would feel that perhaps I had slipped in my technic somewhere. I have had a large number of men tell me that they had about come to the point where they did not want to repair those cut flexor tendons of the fingers; they would rather pay for the disability and the loss of function that exists. I recently had a patient with a cut flexor tendon on a forefinger. I did make a longitudinal incision to expose the tendon, but I made no effort to isolate it or to suture it directly. I sutured the tissues about it, and I think I got, without doubt, the nicest result. I do not believe I am even going to have a ten per cent loss of function.

In closing this, I realize that it is impossible, in the time, to cover the subject fully, but I want to emphasize the importance of prompt attention to minor injuries in the plant, wherever it may be, prompt and efficient, and the avoidance of infection, the importance and necessity of frequent x-ray pictures in all cases in which a fracture might have occurred. A great many reports may be in the negative, but those in authority will be only too happy to receive negative reports. I recently saw a patient whose forearm was injured, but no fracture could be detected clinically. Some six months later the case came under my observation with evidence of nerve impairment and loss of function. An x-ray at that time showed a fracture to have existed in the radius, and it cost that company a good many hundred dollars that need not have been spent.

As I say, in industrial work, you must emphasize the effect on the pocketbook. When we can show the industrialists the value of proper medical and surgical attention as related to their pocketbooks, they will be with us one hundred per cent.

#### Discussion

**Dr. J. A. William Johnson, Newton:** It is difficult to discuss a paper when one agrees with all that the

speaker has said. The subject, industrial accidents, is most fitting, and represents thoughtful research. The observations are keen, the reasoning clear and concise, and the deductions profitable.

Since the workmen's compensation laws were enacted some twenty-five years ago, trauma has been seriously considered by both medical and legal professions. From the industrial standpoint trauma is destined to occupy a very important place in the practice of medicine and surgery, as evidenced by the interest taken in this subject by the American Medical Association and the American College of Surgeons.

The immediate effects of contusions and lacerations, burns and scalds, fractures and dislocations, have been given voluminous descriptions and considerable attention. The remote results, although less apparent are just as grave in their effects and require equally serious attention. I would mention the "industrial back." It is a frequent cause of idleness, fraud and malingering. It means \$18.00 a week in compensation, which is no bait for the thrifty, but to the malingerer it beats working. It causes confusion in the minds of judges, juries, compensation boards, lawyers and doctors, and often leads to injustice to the employee and employer, and to waste of time and funds. The common causes of mistakes in handling injured backs fall into three main groups, and it is the doctor's duty to correct all three of them.

1. Errors resulting from ignorance of true anatomy, physiology, and pathology of the spine.
2. Inefficient and inaccurate methods of examination.
3. Improper treatment based on faulty diagnosis.

I think more attention is paid to fractures today than ever before. Our medical students listen to teachers who are full of enthusiasm. The use of the x-ray shows that each fracture is a case unto itself and requires special attention. The student learns the use of suspension and traction, the Hodgen splint and the Steinman pin. He sees what can be done under the fluoroscope, and the application of the plaster of paris splint to hold the fragments in place, while an immediate x-ray film checks the results. He learns that there must be normal weight bearing lines to avoid abnormal strain on joint ligaments which will result in pain and diminished function as long as the deformity lasts. In spite of good bony union he also learns that the patient has not recovered until joint function and muscle tone have been restored. The outstanding surgeons throughout the world are giving their attention to fractures. I feel that no physician should take an industrial accident case unless he is willing to go the limit in diagnosis and treatment, for the good of the patient, the employer, the insurance company, and for his profession's sake.

A young man came to me about six weeks after he had slipped and fallen in a sitting position, while pulling a hand truck over a cement floor in a small factory. Pain kept him awake day and night. Swelling of the left buttock kept him from sitting. He could only lie on his abdomen or sides. The swelling was

hot, tender, shiny and gave that peculiar feeling to the sense of touch that tells you there is pus under pressure. I opened his buttock under ether down through the fascia and considerable pus, due to bruised and necrosed muscle, was liberated.

A big problem in industrial accidents is the repeater, the man who in spite of the fact that the machine has guards, will get a finger or a hand cut off, after he has just returned from a lay-off due to a broken leg. He is a misfit in the industrial world of high speed machinery. His speed of working just does not coincide with the speed of the machine on which he works. He is out of rhythm with machinery and should be doing something else. Perhaps his domestic troubles are at fault. Improper food, fatigue, ill health, and bad atmospheric and lighting conditions all tend to increase liability to accidents. Those who fail to pass certain sensorimotor tests have been found by psychologists to have an accident rate two and one-half times greater than those who pass the tests.

Without a doubt the responsibility of the surgeon who treats the injured workman is greater today than ever before, due to the many advances in medical and surgical treatment. Better results are expected. The employer realizes the importance of efficient medical work, and accepts the expense attached thereto as part of his overhead. Today many industries have departments of rehabilitation which means restoration, vocational training and adjustment of the injured. This calls for early physical therapy, active cooperation of the patient in the voluntary use of the injured part and the early return to work as the best form of occupational therapy. The loss of time from accidents can thus be reduced. The close cooperation of employer and employee is essential; without it the work of the surgeon is defeated.

## Case Report

### ASTHMA FROM DINITROPHENOL SENSITIZATION

MAURICE HENRY NOUN, M.D., Des Moines

#### CASE REPORT

Frumess\* has recently been able to demonstrate Prausnitz-Küstner antibodies in a case where small doses of the drug caused an eruption. He also obtained a local and focal response on the skin of the patient by applying the drug by the scratch method. Recently I saw a patient who was subject to asthma. The use of dinitrophenol brought on recurrence of symptoms. I demonstrated the Prausnitz-Küstner antibody in this case and also obtained a positive skin test with this substance. The reaction was specific for dinitro-

\*Frumess, G. M., Allergic reaction to dinitrophenol. Jour. Am. Med. Assn., cii:1219 (April 14) 1934.



phenol. The fulfillment of all these criteria has so far not been reported for this drug.

The patient first had an attack of asthma in January, 1933. She was given a few drops of adrenalin hypodermically and the following day was improved to the extent that she returned to work. She had two similar experiences within the following year, but they were both of mild consequence. Her past history was negative. One other member of her family is a sufferer of asthma.

In February, 1934, she started to take six tablets of dinitrophenol. After the third day she developed a mild jaundice. She complained of tiring easily, perspiring excessively and of experiencing a disturbed sense of hearing. She was very restless at night. She discontinued this drug for a short time and then she again started to use it at the advice of a druggist. On August 8, 1934, she was forced to go to bed. She had several asthmatic attacks that day. Adrenalin gave her no relief. Morphine gave her some temporary aid. She finally discontinued taking these tablets after the interne told her that they were very dangerous.

She presented herself at my office on August 2, 1934. Scratch and intradermal skin tests were performed and she was found sensitive to orange, tomato, cat hair, goose feathers, and to dinitrophenol. She was advised to eliminate orange and tomato from her diet, and to keep away from pillows or other materials containing feathers. An injection of adrenalin and the use of potassium iodide and atropine by mouth, every three to four hours, brought about some relief. Several days later I withdrew ten cubic centimeters of blood and allowed it to coagulate. I injected one tenth of a cubic centimeter of her serum intracutaneously into the arm of a girl friend, a non-allergic individual, at five different sites. Twenty-four hours later I performed an indirect method of testing using the following technic. On one of the five treated sites I made a scratch and applied dinitrophenol in powdered form rubbing it into the scratch with a physiologic solution of sodium chloride. I then injected one tenth of a cubic centimeter of 1-1000, 1-100 and one per cent solution of dinitrophenol intradermally into three sites in the recipient. One area was left untouched. Within thirty minutes a wheal slightly larger than a pea with a surrounding area of erythema appeared, and it remained for forty-eight hours, over the area where the scratch test was made. The reactions were more marked over the areas where the graded dilutions of dinitrophenol were injected intradermally. Two days later the reactions disappeared. There was no reaction over the control. Several hours after the intradermal injections of the

graded dinitrophenol the patient had a slight attack of asthma, which required several sedatives before relief was obtained.

#### COMMENT

In this case I obtained positive intradermal skin reactions with graded dinitrophenol. The Prausnitz and Küstner phenomenon was also positive.

This patient had been sensitive to several foods and epidermals. She experienced several asthmatic attacks during the first few months of 1933, and then she had no further trouble, until February 1934, at which time she commenced taking the dinitrophenol tablets. She was evidently only mildly sensitive to the allergens to which she reacted, or she might have developed a temporary immunity during the latter part of 1933. As we all know, various factors may precipitate an asthmatic attack. This patient became sensitized to dinitrophenol, for after the various offending allergens were removed from her diet and her environment, the asthmatic conditions persisted, although to a lesser degree. It was not until she ceased using the drug that the asthmatic attacks completely left her, and it was not until she was tested with the drug that she again experienced difficulty in breathing and coughing, and complained of a tightness in her chest.

#### CONCLUSIONS

1. Dinitrophenol produced asthmatic attacks in an allergic individual.
2. Positive skin tests as well as a plus Prausnitz-Küstner reaction was obtained.
3. An attack of asthma was brought on when the patient was tested intradermally.
4. Transference of the sensitization to an animal, by means of the sensitized serum, was not attempted. All the other postulates indicative of the allergic nature of drug hypersensitivity were fulfilled.

### CLINICAL NOTES FROM THE COLLEGE OF MEDICINE

#### PSYCHASTHENIA IN A CHILD

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Psychiatric problems constitute a large portion of the practice of pediatrics, but physicians seeking practical psychiatric information are confused by advice from well-meaning writers insufficiently grounded in the fundamentals of pediatrics and

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psychiatry, by unfamiliar words and by a welter of various theories and systems of therapeutics. However, the family physician who will take time to investigate the background of the case, obtain the confidence of the child, discover his thoughts and feelings, and apply common sense persuasively, can treat with benefit many of the psychoneurotic manifestations, behavior disorders, and personality faults developing in children.

In such investigations one usually finds that mental illness cannot be attributed to a specific etiologic factor. This has been done too frequently in the past, various groups of investigators placing extreme emphasis on one group of etiologic factors to the exclusion of others. For instance, some have stressed the rôle of heredity while others believe that childhood training is the dominant factor. Certain psychoanalysts have attempted to explain everything on a sexual basis, others on feelings of inferiority. Many have held the view that mental disease has an organic basis and have implicated everything from endocrine dyscrasias to diseased tonsils. Such extreme views are unsound, for mental disorders are usually the result of a chain of processes. Chief among these may be a defect in the germ plasm which determines the constitutional makeup, both intellectual and emotional. Others are faulty early training, difficult environmental situations, thwarting of instinctive desires and ambitions, and organic diseases. Usually a number of these processes operate simultaneously. Patients must be individualized, and it is often impossible to determine the relative importance of each etiologic factor.

The case of a girl, thirteen years of age, treated in the Iowa State Psychopathic Hospital is presented to illustrate the kind of work necessary for the investigation and treatment of mental disorders in children, and the interplay of etiologic factors that may be found.

A distinct behavior change in the child began to be noticed by the parents about a year before her admission to the hospital. This change was characterized by a worried expression, gradual cessation of talking, loss of interest in play and tremendous concern about religion. When admitted to the hospital she wore a forlorn, dejected expression, and although she did not smile, slyly noticed everything about her. She displayed no initiative and was physically inactive, often sitting for hours with her hands in her lap or her head in her hands. It was necessary to dress and undress her, urge her to eat, and take her to the toilet. She scarcely said a word and the only information one could obtain was that she had "naughty thoughts." During interviews the patient was extremely reticent, and it was a long

time before she would talk freely. However, as her confidence was gained, the origins of the curious anti-social behavior were gradually made plain.

The study of the background of the child revealed that the parents, although sincere, moral and respectable, were emotionally unstable, inclined to excessive worry, and extreme strictness in religious views. Because of this, as one would expect, the patient's siblings also were found to be poorly adjusted. The patient was pampered and spoiled as a child. She sucked her nightgown until she was six years old and relied on her family for her smallest needs. She was finicky in her eating although dainties were repeatedly prepared for her, and as the disease advanced, ate decreasing amounts, refusing certain foods, particularly meat. She even carried her aversion to a birthday cake made especially for her because it contained nut meats. She refused to eat meat at any time because it was considered wrong to eat meat on Holy Days and total abstinence, therefore, insured the observance of all such days. Because she was taught that gluttony was one of the Seven Capital Sins, she finally refused all food. Even as a small child she was serious and extremely conscientious. She never joked and was not sure of herself, ending every positive statement with, "at least I think it is that way." Later, great indecision arose and if she said "yes" in answer to a question she was in a stew for hours wondering if she should have said "no." As the illness progressed, refusal to dress herself appeared because of fear of putting on the wrong dress, or the right dress incorrectly. She would not comb her hair because she might not return the comb to the right place. She was taught quite early that everything pertaining to sex was sinful, and was constantly admonished that a sin of this nature would keep her from Heaven. Nevertheless she obtained pleasure in early childhood from viewing the sexual organs of, and in urinating before other children, and mentally associated urination and sex. Later, various forms of sexual play and masturbation appeared. Once, while she was watching a little boy urinate, her mother grabbed her, scolded her and told her that looking at such a thing was a sin and would keep her from Heaven, but to her great consternation the mother herself continued to watch the performance. As the idea that these things were sinful grew on her, she became filled with a feeling of shame and guilt. She tried to stop her sexual activities but could not, and at the age of ten after studying the Ten Commandments, acquired the notion that she had committed adultery. When told during a study of the Seven Capital Sins, that a sin was any



thought, word, deed or action contrary to the law of God, she believed that *thoughts* of urination or sexual activities were sins. Even sight of an animal urinating was thought to be a sin. The more she tried to stop thinking about those things, the more they occupied her mind. She accounted for each thought of this nature in order to report their number at confession, but always forgot the number. Because a bad thought while praying supposedly renders prayer ineffective, she repeated her prayers over and over until she got one just right. She stopped talking for fear she would utter a sinful thought and even became worried because she felt she was not sufficiently sorry for her supposed sins. She told her older sister of forgetting to confess a sin, and then wondered if forgetting was a sin. Excessive prayer ensued and she was often found on her knees at midnight praying for the Pope, the Saints, her teachers, and her family. At the age of seven, she went to the priest for her first confession. She had planned to tell her sins but in the presence of the confessor lost her nerve and confessed fictitious ones. She was told that if the first confession were unsatisfactory, subsequent confessions would be worthless. Therefore, an overwhelming feeling of failure in her religious duties developed. About a year before the onset of the present illness she sustained a fractured skull in an automobile accident and was unconscious for two days. Encephalography a year later showed evidence of slight bilateral cortical atrophy with failure of air to visualize the subarachnoid spaces in the left parietal region.

The etiology of this condition, therefore, presents a number of factors. In the first place, it is highly probable that there was a constitutional personality fault with over-conscientiousness and extreme sensitiveness. In addition the home environment and upbringing were exactly suited to make mental conflict inevitable in a child of this nature. Lack of proper sexual information prevented normal, wholesome sexual development so that with the advent of the sexual stirrings of puberty the child was totally unprepared. In addition to this, emphasis on ecclesiastical definitions and formulations, the real meaning and significance of which she could not grasp, made the possibility of a normal adjustment beyond her capacity. Finally, the organic brain damage may have been a precipitating factor.

In the treatment of this girl, the first essential was to obtain her confidence. This was difficult, and in fact, it was months before sufficient emotional rapport was obtained so that she would discuss her problem freely. The second essential was gradually to re-educate her. While encourag-

ing her to continue to respect her conscience and to hold to her religion, the physician explained the meaning of sex and the true significance of religious teachings. It was also necessary as an integral part of the treatment to keep her away from the home environment. Once she returned home and slipped back into her former state so that re-admission was necessary. Every effort was made to draw out her interests. She was kept busy in the occupational therapy department and as soon as her condition warranted, was sent to school.

At the present time she is attending high school, and although her intelligence quotient falls into the dull normal group, she applies herself diligently, and ranks in the upper half of her class. She appears cheerful and contented, has attracted friends, and there are strong hopes that she is preparing herself for a useful life.

This case suggests a number of subjects for discussion, of which one or two, from the standpoint of the prevention of psychoneuroses in children, should be emphasized strongly. First, parents should be advised to keep open avenues of communication with their children so that during all stages of development they should be able to confide in the parents. This girl never dared to tell her parents what she thought because she knew they would be shocked beyond words. She was afraid to tell her real troubles to the priest. She often thought of confiding in her older sister, but never quite accumulated sufficient courage. Unfortunately many parents have no idea of what their children really think and feel, and the children are struggling with problems the solutions for which they have neither adequate knowledge nor experience. When parents, either because of intellectual inadequacy or unhealthful attitudes, cannot give wholesome advice, as is too frequently the case, it often falls to the lot of the physician to assume the rôle of confidant. Second, because the sexual group of instincts is one of the most dominating forces in life, operating even in early childhood, because nature has placed great rewards on the normal exercise of sexual functions, and because there is no force in life to which society will allow less freedom, conflict over sex is one of the most frequent factors in the causation of psychoneuroses. Mental anguish often results when the child must solve this baffling and tabooed problem alone. The foundation for later trouble is frequently laid when the first childish curiosity is met by prudish embarrassment, cold reserve, sharp rebuff, or a lie. Parents should be instructed to answer questions of a sexual nature casually and truthfully and without overwhelming the child with a mass of unnecessary information he can-

not understand. The child's knowledge of sex should keep pace with his capacity for absorbing such knowledge, so that with the helpful and kindly advice of a sensible adult, he may develop the ability to handle his sexual problems as they arise.

### THE FINLEY HOSPITAL CLINICO- PATHOLOGIC CONFERENCES

#### CHRONIC INTESTINAL OBSTRUCTION DUE TO INTUSSUSCEPTION OF THE ILEUM

MARY M. ATCHISON, M.D., and  
A. C. PFOHL, M.D., Dubuque

The case to be reported is of special interest first, because intussusception of the ileum is especially rare in adults over fifty years of age; second, because of the pathologic condition found at operation; and third, because it illustrates that the so-called psychoneurotic patient may have some underlying pathology, the diagnosis of which demands intensive study and prolonged observation.

#### CASE REPORT

The patient, a white American female, fifty-four years of age, was admitted to The Finley Hospital on September 9, 1935, with a complaint of "attacks of colicky abdominal pain lasting two to three days preceded by attacks of constipation and followed by diarrhea."

*Family history:* Mother dead at sixty-five years of age, with diabetes; father at seventy years of age of cerebral accident; two brothers alive and well; one brother dead from heart trouble; one sister alive, one sister dead of appendicitis; no history of tuberculosis, insanity or cancer in the family.

*Social history:* Husband dead at fifty years of age, cerebral accident; one son alive and well; no children dead; one miscarriage.

*Past history:* Ordinary diseases of childhood; no bad fevers or accidents; habits: good (no alcohol, tobacco or drugs).

*Operations:* Had been performed as follows: subtotal hysterectomy and bilateral salpingectomy, fibroid uterus, 1914; tonsillectomy, 1915; vaginal extirpation of cervical stump, 1928; and radical excision of fistulae in anus, 1934.

*Examination:* Respiratory system, negative; cardiac system, negative; gastro-intestinal sys-

tem, constipated all her life; genito-urinary system, negative; nervous system, nervous all her life. For the last three years she has noticed considerable weakness and shaking of her left hand and arm.

*Present illness:* In 1933 the patient began to have attacks of colicky abdominal pain. The attacks were preceded by periods of obstinate constipation accompanied by marked distention and lasted two or three days. When the bowels moved either as the result of enemas or cathartics the patient obtained relief. Diarrhea lasting three to five days always followed the attacks. The patient during the attacks felt hard lumps in various parts of the abdomen. These lumps appeared and disappeared at different times during the attacks. The colicky pain was usually centered about the region of the navel and occurred in paroxysms. There was always much borborygmi during the attacks.



Fig. 1. Photograph of the surgical specimen (S-398-35) showing the upper portion of the intestine entering the lower portion.

No blood was noticed in the stools but usually they contained a moderate amount of mucus. Occasionally the patient was nauseated and vomited mucoid material stained with bile. The attacks gradually increased in frequency and during the last six months have recurred at almost monthly intervals. After a severe attack in January, 1935, the patient was examined in a well known clinic. X-ray examinations of the colon were negative. Diagnoses of fistulae in anus and paralysis agitans were made. A radical excision of the fistulae in anus was done but the patient returned to her home with no relief.

The last and most severe attack began August



15, 1935, and the onset of the pain was preceded by a diarrhea of two days' duration. The colicky pain became almost constant and was relieved only temporarily by enemas. Distention and borborygmi were more pronounced than in any previous attack. The patient vomited bile stained mucoid material. The temperature ranged between 99 and 100 degrees.

*Physical examination:* The patient was a moderately obese, white female apparently of the stated age of fifty-four who appeared in considerable distress. The facies were those of the Parkinsonian syndrome. The left arm and hand were in almost constant tremor. The pupils of the eyes measured two and one-half millimeters, were round and equal; light reaction 100/100; rotations normal; sclera normal; fundi showed moderate arteriosclerosis. The nose, ears and mouth were negative. There was a slight diffuse enlargement of the thyroid gland, but no palpable cervical glands. The chest was well developed and symmetrical; expansion fair and equal; spine, normal; Litten's sign present; breasts, pendulous. The heart was not enlarged, there were no murmurs; pulse 90; blood pressure 110/75. The lungs were clear to percussion and auscultation. There was moderate generalized distention in the abdomen. A healed midline suprapubic scar was present. Active loops of bowel could be seen contracting under the abdominal wall. On palpation hard masses were felt. These appeared and disappeared under the examining fingers. Borborygmi were pronounced and easily heard across the room. There was a small umbilical hernia present, and slight tenderness around the navel.

The extremities were negative except for the tremor noted above. Reflexes were hyperactive and sensations normal. A few external hemorrhoids and the fistulectomy scar were found at the rectal examination but no rectal masses were present. The pelvic floor was relaxed. The uterus and adnexa could not be palpated. The white blood count was 10,600 and the hemoglobin, 84 per cent. There was a faint trace of albumin in the urine; a rare leukocyte per H.P.F. negative for sugar and acetone. A flat x-ray plate of the abdomen showed loops of the small bowel distended with gas—a picture characteristic of bowel obstruction.

*Preoperative diagnosis:* Intestinal obstruction.

*Operative notes:* A lower transrectus incision was made on the right side, and a small amount of clear fluid was found in the peritoneal cavity. The cecum was normal. At its entrance into the cecum the ileum was collapsed. The collapsed bowel was traced for approximately five feet where an intussusception of the ileum was found. It was

estimated that eighteen inches of the ileum was intussuscepted. The intussusception could not be reduced and the entire mass was resected. (Fig 1.) The proximal and distal ileal ends were closed and a lateral anastomosis made. An enterostomy was then done in order to remove the tension from the anastomotic suture line.

*Pathologic report:* The specimen consisted of a portion of the ileum measuring forty-five centimeters in length and fifteen centimeters in diameter. At the upper pole an edematous portion of the intestine entered the main mass which was infiltrated with blood. Toward the upper pole there were patches of fibrinous exudate. On opening, the intussusceptum extended into the intussusciens for a distance of thirty centimeters. (Fig. 2.) On opening the intussusceptum the wall of the intestine in the upper portion was greatly thickened due to edema. The wall of the lower half contained several cyst-like cavities lined by smooth membranes. In the mid-portion a pedunculated polyp, three centimeters in diameter, was



Fig. 2. Photograph of the specimen after removal of the anterior wall of the ileum showing the intussusceptum in situ.

attached to the mucosa (Fig. 3). Sections of the polyp and the upper portion of the intestine showed the former to be a benign adenoma.

*Anatomic diagnosis:* Polyp of the ileum; intussusception; edema and cyst formation of the intussusceptum; partial intestinal obstruction; fibrinous peritonitis.

*Postoperative course:* The patient has had a satisfactory postoperative course since the operation which was done two months ago. Her bowels have functioned normally and apparently she has recovered.

## DISCUSSION

The most outstanding features of the case will be considered. First, the patient had a not uncommon history, that of being very nervous, of being constipated, of having become an habitual cathartic taker, of being a chronic complainer and of having symptoms which might well have been due to an irritation of the bowel. She had been the patient of several physicians and had been subjected to four operations, three of them being for pelvic disorders. Diagnoses of psychoneurosis and spastic colitis were repeatedly made on the basis of the history, and negative x-ray and physical examinations. At the onset of her present illness her nervous symptoms became exaggerated, partly because of financial losses and the death of her husband. Symptoms of Parkinsonian disease were added at that time to the clinical picture. In view of these facts a diagnosis of a gastro-intestinal functional disorder or an irritation of the bowel seemed the most logical. It should be emphasized, however, in dealing with this type of patient that there is always a temptation to underestimate the complaints because the patient colors them with his own psyche. Because the physician is unable to detect anatomic changes to account for the subjective symptoms he is prone to give such patients an unfair lack of consideration. The realization of this fact should stimulate every doctor to greater efforts in making an exact diagnosis rather than to be content to classify the patient as a psychoneurotic individual.

With the knowledge of the actual condition present at operation it is difficult to understand why some evidence of its presence was not found on x-ray examination. Possibly this was because the intussusception was intermittent, but from a pathologic standpoint it appears to have been of long duration. Perhaps a lesson we should learn is that in most x-ray examinations, study of the small intestine is neglected, or our methods of examination are inadequate. Probably with better methods the small intestine will no longer be termed "no man's land" as far as the diagnosis of pathology is concerned.

Intussusception is a condition in which one portion of the bowel invaginates into an adjacent portion. In nearly all cases the upper segment invaginates into the lower segment. The entering segment or upper portion is called the intussusceptum. The receiving sheath of gut is termed the intussusciptens. The condition is usually acute and occurs chiefly in children under one year of age. It is more likely to be encountered in vigorous boys with increased movability or ir-

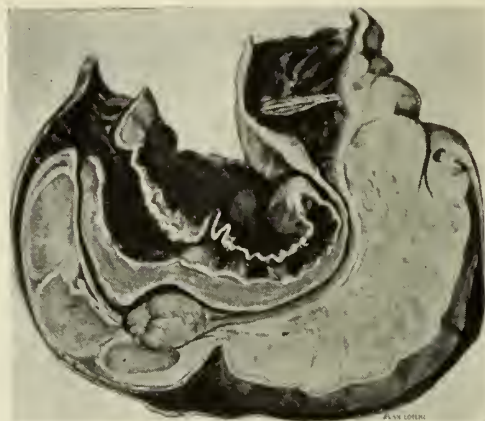


Fig. 3. Photograph of a water color drawing of a cross section of the intussusception. Note polyp of the mucosa and edema and cyst formation of the wall of the intussusceptum.

ritability of the bowel associated with hyperperistalsis. Intussusception in adults is more commonly chronic and is usually due to polyps, benign or malignant tumors, cysts, inflammatory changes, congenital anomalies, or to hyperperistalsis due to the overuse of cathartics. The condition is found in males more frequently than in females in the proportion of two to one. Intussusception is exceedingly rare after the age of fifty years. The oldest case reported since 1900 was in a patient sixty-two years of age and was due to a polyp (Rutherford Morrison). The most frequent occurring types of intussusception are listed in their relative order:

1. Ileocecal (the ileocecal valve and ileum pass into the cecum and colon).
2. Ileocolic (the ileum alone prolapses through the ileocecal valve into the colon).
3. Colic (the large bowel is prolapsed into itself).
4. Enteric or ileal (the small bowel alone is involved).

By far the most common is the ileocecal type.

A review of this case of chronic enteric intussusception in a woman fifty-four years of age indicates the following etiologic factors:

1. Chronic constipation and the abuse of cathartics which produced an irritable bowel.
2. Chronic enteritis and hyperperistalsis with the production of retention cysts in the wall of the ileum.
3. Adenomata of the ileum with polyp formation.

While any one of the above agents could have been the cause of the intussusception, our patient presented the combination of the three, which added special interest to the case.



# STATE DEPARTMENT OF HEALTH

*Vester L. Biering*

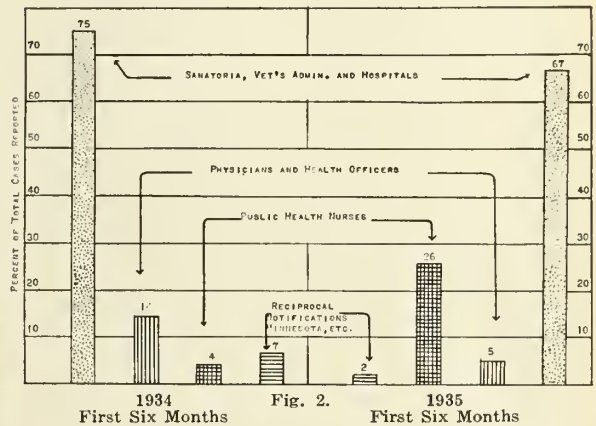
## Tuberculosis Morbidity and Mortality in Iowa

Deaths from tuberculosis in Iowa continue to decrease steadily in number from year to year. This is apparent in the accompanying bar diagram (Fig. 1). The black bars represent the number of deaths occurring annually for the years 1924 to 1935 (first six months). That the reporting of cases of tuberculosis to the state department of health is below standard is shown in the same figure. The minimum standard calls for at least

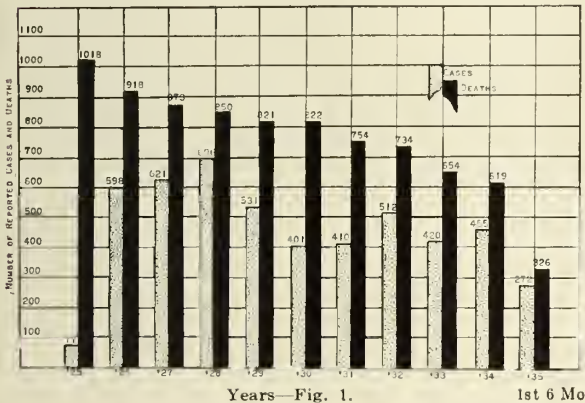
shows that of cases of tuberculosis reported to the department, the great majority are reported from sanatoria and hospitals. It is highly desirable that a higher percentage of reported cases of

### AGENCIES REPORTING TUBERCULOSIS IN IOWA

1934, First Six Months and First Six Months 1935



TUBERCULOSIS IN IOWA  
Reported Cases and Deaths, 1925-1934



twice as many cases to be reported annually as the number of deaths for the year. The ratio of reported cases to deaths in Iowa instead of being 2:1 or better, is less than 1:1, recorded deaths exceeding the total number of cases reported.

Tuberculosis cases are reported to the State Department of Health by first, physicians, and health officers; second, nurses in cooperation with physicians; third, reciprocal notification through other state departments of health; and fourth, sanatoria, veterans' administration facilities and hospitals. The bar diagram in Fig. 2 is based on information contained on report cards received by the department for the first half year of 1934 and during the same period in 1935. The diagram

tuberculosis reach the department from physicians and health officers.

The accompanying line diagram (Fig. 3) illustrates reported cases and deaths from tuberculosis for the period July 1934 to July 1935, arranged according to the various age groups. It will be observed that with the exception of the age group, one to four years, reported cases exceed the annual number of deaths for persons up to forty years of age. For the age groups including forty to forty-nine years and above, the annual number of deaths is greatly in excess of cases reported for the corresponding age groups. Every open case of tuberculosis, whether young or old, is a potential source of infection to relatives, associates and others in the community. Viewed from this standpoint, the shaded area in Fig. 3 represents, in a sense, a large potential reservoir of infection. Although no cases of tuberculosis were

reported in persons seventy years of age or above, sixty-one deaths from the disease were recorded in the age group, seventy to seventy-nine years, ten deaths in the group eighty to eighty-nine years, and one death in a woman ninety years of age.

The extent to which potentiality becomes reality in the transmission of tuberculous infection is naturally dependent upon such factors as early

type of the disease in which tubercle bacilli are often present in the sputum as demonstrated by repeated laboratory tests.

With federal, state, local and other agencies working together, there is every hope that further reduction in morbidity and mortality from tuberculosis will be brought about in the years to come.

TUBERCULOSIS IN IOWA—JULY, 1934, TO JULY, 1935

Distribution of Reported Cases and Deaths by Age Groups

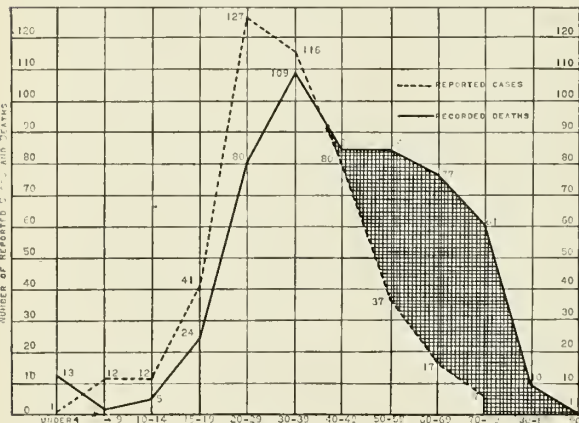


Fig. 3.

recognition, education of patients and their co-operation in the exercise of precautionary measures. Education of the public is also necessary so that people may learn to discriminate between the childhood type of infection as evidenced by a positive tuberculin or Mantoux test, and the adult

SCARLET FEVER CONVALESCENT SERUM

Arrangements are being made for the procuring of blood from persons recently convalescent from scarlet fever. The serum will be processed at the State Hygienic Laboratories in Iowa City and will be available in ten and twenty cubic centimeter vials.

Blood donors will be in the group of persons twelve years of age or above who within the past three months, have been reported to the State Department of Health as having scarlet fever. The use of scarlet fever convalescent serum in the prevention or treatment of conditions caused by hemolytic streptococci is an additional factor in emphasizing the importance and value of more complete reporting of cases of scarlet fever.

Scarlet fever convalescent serum will be distributed without charge, to physicians or hospitals, where indigent or underprivileged families are concerned. In other cases, it will be necessary to make a charge, to cover costs incident to obtaining, processing and distribution of the serum. A limited amount of pooled scarlet fever convalescent serum will be available for distribution on request, after the third week in November.

PREVALENCE OF DISEASE

	September 1935	August 1935	September 1934	Most Cases Reported From
Diphtheria .....	68	17	21	Polk, Clayton, Black Hawk
Scarlet Fever .....	152	68	114	Decatur, Woodbury, Polk
Typhoid Fever .....	27	24	90	Polk, Benton
Smallpox .....	3	10	2	Des Moines, Fremont, Jackson
Measles .....	7	15	17	Woodbury
Whooping Cough .....	51	59	37	Woodbury, Dubuque
Cerebrospinal Meningitis .....	1	8	3	Page
Chickenpox .....	28	2	17	Dubuque
Mumps .....	66	53	38	Boone, Black Hawk
Poliomyelitis .....	15	13	7	Clinton
Tuberculosis .....	42	62	31	(For State)
Rocky Mountain Spotted Fever....	2	0	0	Lee, Linn
Undulant Fever .....	6	13	26	(For State)
Syphilis .....	135	105	113	(For State)
Gonorrhea .....	227	176	160	(For State)



# The JOURNAL of the Iowa State Medical Society

ISSUED MONTHLY

RALPH R. SIMMONS, Editor.....Des Moines

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**THE PSYCHOLOGIC APPROACH**

Newness cannot be claimed as a justification for a discussion of the psychologic approach in the diagnosis and treatment of bodily ailments. The truly successful physician throughout the ages has consciously or unconsciously employed these methods. The fact that psychologic methods are not more universally employed, and that their non-observance leads to such costly and even tragic blunders, seems full justification for any attempt to bring the matter conspicuously to the attention of all practicing physicians.

A national authority on the diseases of the gastro-intestinal tract recently stated that his most difficult and most trying problem was with patients suffering from symptoms suggesting definite organic pathology, but who on critical and painstaking examination revealed only an unstable nervous system with an immediate aggravating emotional upset. Vomiting, food hunger and epigastric pain do not necessarily mean peptic ulcer; it may be just as real and just as annoying to the patient if the condition is the result of emotional unbalance. An unhappy business association or pressing financial obligations may be the etiologic factor. The housewife with abdominal pain, irregular or painful menstruation or bizarre pelvic symptoms, may not need hysterectomy or glandular products half as much as she needs a more pleasant husband or freedom from nagging "in-laws."

Recognizing these facts, it behooves the physician to accept and apply practical psychology; in fact, he should become a serious student of the subject. Unfortunately, psychology has been looked upon too often as an extra-medical subject and, as such, has not been accorded a position in the medical curriculum commensurate with its value. We are too prone to look upon the methods

of psychology as being those of psychoanalysis or the interpretation of subconscious states. These have a place, but the psychology to which we refer is a more homely and at the same time a more commonly useful variety. One does not need to know the Freudian theory to appreciate the untoward effect of derangements in the emotional life of the patient. An appreciation that the psychic cannot be divorced from the somatic and that both must be studied in every case if one is to succeed, is definitely fundamental. This psychosomatic relationship is inseparable and, consequently, inter-reactive. Organic or somatic disturbances immediately and positively affect the emotional or psychic state. Just as truly, maladjustment of the emotions or psyche are prone to be reflected in organic or somatic manifestations. Obviously then, it is impossible to understand the one state without a full appreciation of the other. Perseverance and patience, combined with an intelligent approach in history-taking, will reveal the emotional state of the patient just as truly as the physical examination and laboratory procedures will disclose the physical state of the patient. With reprehensible frequency, the physician in his haste overlooks the former and trusts solely to the latter method of approach. When we appreciate this shortcoming and correct our methods of investigation, then will we render a more complete service to suffering humanity, and fewer miraculous cures will be reported on our former patients by the charlatan or "left handed" practitioner, whose mainstay may be a practical appreciation of the principles of psychiatry.

## DISASTER AND LIFE SAVING SERVICES OF THE RED CROSS

Beginning as a nursing service for those wounded in battle, and broadening its scope to include the victims of natural disasters, the American Red Cross, since its inception, has been closely allied with the medical profession in its work of relieving human suffering. With the passing years, when the attention of physicians was turned more and more to methods of prevention the Red Cross followed their lead and formulated programs of water life saving, first aid, public health nursing and health education.

Early this spring, when repeated dust storms swept over parts of Kansas, Texas, Colorado, New Mexico and Oklahoma, causing many deaths from respiratory diseases, the Red Cross assigned forty-eight nurses to cooperate with local health and relief authorities in the affected area. A four-point program was launched which included emergency medical care and the establishment of temporary

hospitals where local facilities were inadequate; a measles control program—each measles case represented a potential pneumonia case; dust proofing homes; and the distribution and instruction in the use of dust masks during storms. More than 750 days of nursing service were supplied by the Red Cross in this area, nearly 600 persons were treated in hospitals or in their homes; 1,400 houses were made dustproof, and over 17,000 dust masks were given out.



Still the Greatest Mother

No one can halt the sudden caprices of nature—floods, hurricanes, tornadoes, dust storms, etc.—which annually cause death, suffering and destruction of homes, but everyone can join hands in the Red Cross to mitigate and ease these blows, help care for those injured, and rehabilitate those made homeless.

The Red Cross program of water life saving has had two outstanding effects since its inception a score of years ago; it has greatly reduced the percentage of fatalities by drowning; and it has tremendously increased the popularity of healthful water sports.

In the old days of the muddy, treacherous swimming hole and unsupervised bathing beaches water tragedies took a terrific toll. They still do, but the trend of drownings is downward. There are approximately 8,000 drownings a year in the United States, but there are thousands, perhaps millions more swimmers. The Red Cross is making progress, it is looked to for safety leadership and provides hundreds of trained camp counsellors, teaches swimming, trains for safety and equips teachers to carry on this work. More than half

a million life saving certificates have been awarded by the Red Cross in the last two decades. Safeguarded by Red Cross training and supervision, swimming and water sports have become the most universal in America and each year thousands of youngsters learn water safety at public pools, beaches and summer camps under the direction of Red Cross life savers. By the time this generation of swimmers matures the nation should be truly "waterproof."

The holders of Red Cross life saving and first aid certificates, living in every state, county and almost every community, are safety sentinels, minute men and women ready to aid in emergencies.

Red Cross disaster and safety services are supported by the nation-wide annual Roll Call—just as are its nursing, veteran and civilian relief programs. Each physician should be enrolled as a member and he should use every influence to assist in assuring the success of the program in his community. Remember the date—November 11-28.

#### RESPIRATORY INFECTION IN ALLERGIC PATIENTS

It is a common observation that persons who exhibit allergic reactions of the upper respiratory system are more prone to suffer from common colds and other respiratory infections than the non-allergic individual. In a recent report Dr. Louis Sternberg\* reviewed the hospital record of two hundred patients admitting a history of hay fever of from one to six years duration. Of the two hundred he found that fifty-three gave a previous history of frequent colds, usually in the winter. Of these fifty-three patients, thirty-six declared that following their first seasonal or perennial course of prophylactic pollen extract for hay fever, they had been relieved of head colds throughout the following winter months. Of this total number, twenty-five were sensitive to ragweed, eight to timothy, and three to both ragweed and timothy. It is interesting to note that of the seventeen patients reporting little or no relief from winter colds following the prophylactic treatment, this same group reported little or no benefit insofar as hay fever symptoms were concerned, from the pollen treatment. Dr. Sternberg concludes: "The reason for this apparent immunity to the infection known as the common cold is not known. It is presented as a clinical fact that remains to be explained." While the series observed by Dr. Sternberg is not sufficiently large to warrant definite conclusions, it opens up a new avenue of thought which may prove definitely fruitful at a later time.

\*New York Journal of Medicine, July 15, 1935.



## SPEAKERS BUREAU ACTIVITIES

### PROGRAM OF THE CANCER COMMITTEE

Because of the importance of the work which the Cancer Committee of the Iowa State Medical Society has undertaken, the Speakers Bureau Committee is very glad to devote its page to a statement of the work contemplated by this committee and the program outlined for its accomplishment.

At a meeting of the Council on October 10, Dr. Erskine made the following statement regarding a proposed statewide cancer program:

"Under certain conditions Iowa offers a fine field for an experiment carried on over a period of years. The incidence of cancer in Iowa is only forty per cent of the average for the total registration area. We believe that the reasons for this are that we have few large cities in the state, and a high degree of harmony existing between the various health agencies. Your subcommittee offers for your approval an outline of a plan designed to educate the laity from the standpoint of early diagnosis and treatment of cancer . . . The Cancer Committee should have control over the speakers and the material sent out under its educational campaign. Lay education for the first year should include a lecture to the women's clubs in each county, setting forth the facts about the diagnosis and treatment of cancer which, if recognized by the profession and the public, would result in avoiding almost all of the present deaths from cancer of the skin, about half the present deaths from cancer of the breast and cervix, and a considerable number of deaths from cancer of other organs. Similar lectures should be given to the nurses in each training school of the state. Articles dealing with the simple causes of cancer should be published in newspapers, and the radio should be used frequently."

In addition, Dr. Erskine's report included continued work in professional education, and the adoption of certain standards of diagnosis and treatment. The program as drawn up by the executive committee is as follows:

The Cancer Committee of the Iowa State Medical Society, consisting of the members of the council, Dr. D. J. Glomset of the Speakers Bureau, Dr. E. D. Plass and Dr. F. P. McNamara has outlined the following educational program regarding cancer which is to be carried out in Iowa during the winter months. The councilors and the members of the executive committee will aid in every way possible to make the campaign a success, although this largely depends upon the active cooperation of all county chairmen.

1. The councilor will appoint a chairman physician in charge of the cancer program in each county. The chairman will make arrangements for meetings in his county.
2. The chairman should make contacts with program committees of Women's Clubs (and other interested groups) as soon as possible in order to make arrangements for lectures on cancer at one of their meetings. In general, outside rather than local doctors should give these lectures. The Iowa State Federation of Women's Clubs is co-operating in developing the lectures before Women's Clubs.

3. Arrangements for lectures before nurse's training schools, nurse's societies, as well as high school and college groups should also be made. Local physicians as lecturers should be suitable for these groups although this is left to the judgment of the councilor and local chairman.
4. Speakers may be arranged for through each councilor in cooperation with the county chairman or through the Speakers Bureau. In the latter instance it is essential that the dates of meetings should be given to the Bureau as soon as possible. It is also essential that the Bureau be furnished a list of desirable speakers as early as convenient. As some supervision of the lectures is desired, it is suggested that each speaker be required to furnish a copy of his talk to the councilor before the date of the lectures.
5. Each county society should be encouraged to devote one or more meetings to the consideration of some phase of the cancer problem.
6. Each of the larger hospitals in your district should be encouraged to meet the minimum standards for the care of cancer patients as outlined by the American College of Surgeons.
7. A list of the number of lectures and of the speakers, with an estimate of the number of listeners should be kept in order to make an annual report.

#### Executive Committee:

A. W. Erskine, M.D.

E. D. Plass, M.D.

F. P. McNamara, M.D., Chairman.

The work of the Cancer Committee has been done voluntarily, and the program outlined will call for much additional work on the part of the committee and those appointed county chairmen. Full credit should go to those physicians who are furthering the cause of cancer control by their splendid work in this direction.

### RADIO PROGRAMS

WOI, Wednesdays, at 4:30 P. M.

WSUI, Mondays, at 8:00 P. M.

November 6—Scarlet Fever and Measles.

R. H. McBride, M.D.

November 13—Nervous Breakdowns.

J. E. McFarland, M.D.

November 20—Thanksgiving Talk.

A. B. Deering, M.D.

November 27—Dangers in the Indiscriminate Use of Drugs.

John C. Parsons, M.D.

December 4—If I Were Twenty-one Again.

A. C. Page, M.D.

# WOMAN'S AUXILIARY NEWS

*Edited by the Press and Publicity Committee*

Mrs. DEAN W. HARMAN, *Chairman*, Glenwood, Iowa

## DUTIES AND RESPONSIBILITIES OF AN AUXILIARY MEMBER

Mrs. H. B. Moorehead, Glenwood

Every Auxiliary member has a duty to perform and a share of the responsibility for the success of her group. When you become a member of your county medical Auxiliary your duty does not end there; you are a part of it, and you have work to do. Are you as a member doing your share? If not, why not? If your group is not doing things to make your meetings interesting, then it is your duty to see that it is, and to encourage every member to do the same.

We have a very worthwhile program for this year; it is constructive and educational, and if followed in an enthusiastic manner, your meetings cannot help but be interesting.

Have you arranged for speakers to visit your group? Have you selected your book for your book review? Have you as a committee member done your work well? Have you done your part by attending all meetings?

There are so many little things that a member can do to make the meetings interesting. Your president cannot do it alone. She must have the cooperation of every member. Here are a few suggestions. Pay your dues promptly; attend all meetings; smile and lend a helping hand; enter in on all discussions; bring to the meetings any items of interest that you chance to read; write a paper on some branch of the work and present it for discussion; sell and secure renewals for *Hygeia*; work with the schools in your community; help to plan health programs (materials such as posters, short plays and readings, can be secured by writing your state president); and plan a few social affairs to be held before or after the meetings. A covered dish dinner is lots of fun and will help you become better acquainted with the wives of your neighboring doctors. Above all make every member feel welcome, and impress on each one that she is important as a member.

If you are not a captain, then be a good soldier. If you do your share as an individual, your group is bound to be a success. Let us hear what you are doing.

## HYGEIA

What are you doing about *Hygeia* in your group? There is a wealth of very valuable material in every copy of this magazine, published by the American Medical Association for lay readers. In the December issue will be articles on "Adopting a Baby," "Sinus Trouble," "Home Nursing," "Cancer," "Chronic Arthritis," and "Modern Plague." An issue full of sound authoritative information on health matters of particular interest at this season.

## RADIO PROGRAMS

The toast, "Your Health—Ladies and Gentlemen . . ."—through music—each Tuesday at 4:00 p. m., central standard time, will introduce the new radio program of the American Medical Association. It will be offered over the blue network of the National Broadcasting Company, beginning October 1, 1935. A new type of program, in vivid dramatic form with incidental music, is being developed, showing medical emergencies and how they are met. The hero of the medical emergency, the doctor who is available day and night for the protection and promotion of *your health*, is the real sponsor of this series of practical and entertaining health broadcasts. The following points are some of the things that the Auxiliary can do to help the American Medical Association in these radio programs:

1. Listen to it, so they will know what it is.
2. If the local broadcasting station does not take it, ask them to do so.
3. Write to the National Broadcasting Company if you like the program, and to the American Medical Association if you do not, stating why.
4. Tell your friends about it.
5. Tell organizations about it—Women's Clubs, Child Study Groups, Parent-Teachers Associations, etc.

## OFFICERS MEET IN DES MOINES

The Board of Directors and County Presidents of the Woman's Auxiliary to the Iowa State Medical Society held a meeting at the Fort Des Moines Hotel, Des Moines, Iowa, Thursday, October 10, 1935. The meeting was called to order by the president, Mrs. M. C. Hennessy, followed by prayer. Reports of treasurer and delegate (Mrs. Hennessy) to the National Auxiliary Meeting were given. Mrs. Hennessy reported that Iowa was the only state which succeeded in working out a uniform fiscal year for all of the County Auxiliaries. Mrs. James A. Downing, Des Moines, was made a Director of the National Board. Committees for the year were announced, and Committee Chairmen gave their reports, and outlined their plans for the year's work—all plans having been approved by the State Medical Society wherever this was necessary. Seventy-five dollars was allowed for the expenses of the Health Essay Contest. "Immunitization Against Disease—A Gift of Science To Mankind" is the subject chosen for this year. Nineteen members were present at the meeting, which was followed by a luncheon at the hotel.

Mrs. P. W. Beckman, Secretary.



## SOCIETY PROCEEDINGS

### Black Hawk County

W. W. Bauer, M.D., of Chicago, director of health and public instruction of the American Medical Association, was the principal speaker for the Black Hawk County Medical Society, at a dinner meeting held in Waterloo, Tuesday, October 15. Dr. Bauer spoke on Preventive Medicine, before a group composed of some ninety physicians, dentists, veterinarians, pharmacists and nurses.

### Cherokee County

The second regular meeting of the Cherokee County Medical Society was held at the Sioux Valley Hospital, Monday, October 21, with Mark C. Wheelock, M.D., of Cherokee, furnishing the scientific program by reading a paper on Bright's Disease.

### Dallas-Guthrie Annual Meeting

The Dallas-Guthrie Medical Society met at the Hotel Panora Thursday, October 17, and the following program was presented by members of the society: Ethnic Destiny, C. M. Porter, M.D., of Woodward; When to Operate on a Mastoid, P. W. Beckman, M.D., of Perry; and Obstetric Anesthesia, M. H. Brinker, M.D., of Yale. The annual election of officers was held with the following results: Dr. P. W. Beckman of Perry, president; Dr. C. R. Osborn of Menlo, vice president; Dr. S. J. Brown of Panora, secretary and treasurer; Dr. E. L. Bower of Guthrie Center, delegate; and Dr. W. R. Van Duzer, of Casey, alternate delegate.

S. J. Brown, M.D., Secretary.

### Johnson County

At the invitation of the State Board of Control and Dr. Edwards and his staff, the Johnson County Medical Society held its November meeting, Wednesday, the sixth, at the Oakdale Sanatorium. After a six o'clock dinner J. D. Boyd, M.D., of Iowa City, presented a paper on Tuberculosis in Childhood; discussion was opened by W. M. Spear, M.D., of Oakdale.

Horace M. Korn, M.D., Secretary.

### Linn County

Edward Jackson, M.D., of Denver, Colorado, will be guest speaker for the Linn County Medical Society at the meeting to be held in Cedar Rapids, Thursday, November 14. Dr. Jackson will speak on Practical Ophthalmology for Physicians and Surgeons. His address will be discussed by Drs. C. S. O'Brien of Iowa City, Royal F. French of Marshalltown, and W. J. Foster of Cedar Rapids.

T. F. Hersch, M.D., Secretary.

### Mills County

At a called meeting of the Mills County Medical Society held in the Armory at Glenwood, Friday,

November 1, a modified "Denny" plan for the medical care of the indigent sick, was adopted. Based on the old county fee schedule, bills are to be reviewed by a committee of the society before being sent to the local relief office.

J. M. Donelan, M.D., Secretary.

### Sac County

The Sac County Medical Society met in the Community Building at Lake View, Thursday, September 12, for a dinner and a business session, with ten members present. Papers were read by Louis J. Frank, M.D., of Sioux City, on Common Skin Diseases and Their Treatment; and William H. Gibbon, M.D., of Sioux City, on X-Ray and Radium in the Treatment of Malignant Diseases. The papers were freely discussed.

J. R. Dewey, M.D., Secretary.

### Scott County

William P. Murphy, M.D., of Boston, Massachusetts, spoke on Modern Treatment of Anemia, at the meeting of the Scott County Medical Society held in Davenport, Friday, October 25.

### Sioux County

Two Sioux City physicians furnished the scientific program for the Sioux County Medical Society when that organization met in Ireton, Monday, October 14. L. E. Pierson, M.D., addressed the group on Kidney Diseases; and Louis J. Frank, M.D., read a paper on Common Skin Diseases and Their Treatment.

### Wapello County

A joint meeting of the Wapello County Medical Society, and the Ottumwa Kiwanis and Rotary Clubs, was held at the Ottumwa Hotel, Monday, November 4, at which time W. W. Bauer, M.D., of Chicago, director of health and public instruction of the American Medical Association was guest speaker.

### Washington County

The Washington County Medical Society held its monthly meeting, Tuesday, October 29, following a six-thirty dinner at the Congress Hotel. F. P. McNamara, M.D., of Dubuque, addressed the group on Pathology, especially emphasizing cancer of the various organs. The lecture was illustrated with lantern slides and was heartily appreciated by all present.

W. S. Kyle, M.D., Secretary.

### Woodbury County

The October meeting of the Woodbury County Medical Society was held at the West Hotel in Sioux City, Tuesday, October 22. Three Council Bluffs physicians presented the following program: Rela-

tionship of Psychiatry to General Medicine, W. E. Ash, M.D.; Coronary Thrombosis, E. B. Floersch, M.D.; and Head Surgery, L. G. Howard, M.D.

#### Iowa and Illinois Central District Medical Association

The quarterly meeting of the Iowa and Illinois Central District Medical Association was held at the LeClaire Hotel in Moline, Illinois, Friday, October 18. Harold B. Cushing, M.D., professor of children's diseases at McGill University, Montreal, Canada, addressed the members on Some of the Newer Phases of Prophylactic Inoculation in Children, mentioning the subject in relation to pertussis, measles, diphtheria, poliomyelitis and scarlet fever. The address was discussed by W. L. Crawford, M.D., pediatrician of Rockford, Illinois. Worling R. Young, M.D., of Geneseo, Illinois, presented a clinical case, and Preston E. Gibson, M.D., of Davenport, gave a short talk on In Children—Vomiting—The Symptom. Over one hundred physicians of the tri-cities and surrounding territory attended the dinner and meeting.

James Dunn, M.D., Secretary.

#### Southeastern Iowa Medical Society

The annual meeting of the Southeastern Iowa Medical Society was held in Muscatine Wednesday, October 23, with the following program: Vaginal Discharges, A. Keith Droz, M.D., of Washington; Acute Otitis Media, R. S. Reimers, M.D., of Fort Madison; Home Obstetrics in the Country, Roy L. Tandy, M.D., Morning Sun; The Gomco Clamp Method of Juvenile Circumcision, John McKitterick, M.D., of Burlington; Treatment of Shock, E. T. Plowman, M.D., of Morning Sun; Bladder Symptoms in Women with Negative Urinary Findings, M. M. Benfer, M.D., of Davenport; Fractures of the Lower Extremities, W. C. Goenne, M.D., of Davenport; Calling Attention to a Neglected Line of Therapy in Medicine and Surgery, T. F. Beveridge, M.D., of Muscatine; and Injuries About the Knee Joint, W. G. Bessmer, M.D., Davenport. The guest speaker for the occasion was Arnold S. Jackson, M.D., of Madison, Wisconsin, who presented an address on Diseases of the Thyroid Gland.

Officers elected at the annual business session include: Dr. L. A. Coffin of Farmington, president; Dr. F. B. Dorsey, Jr., of Keokuk, vice president; and Dr. C. J. Lohmann of Burlington, secretary and treasurer.

The after dinner program consisted of the president's address, given by Dr. C. P. Phillips of Muscatine; remarks of the district councilor, Dr. C. A. Boice, of Washington; Observations on an European Vacation Trip, Dr. Beveridge; and Progress of Medical Science, Dr. Jackson.

#### PERSONAL MENTION

Dr. E. B. Hoeven of Ottumwa, was the speaker for the Association of Commerce of Centerville, at a luncheon meeting on September 30. His subject was "The Business Man's Health."

Dr. Leland F. Studebaker has associated himself with his father, Dr. John F. Studebaker, for the practice of medicine in Fort Dodge. Dr. Studebaker was graduated from Stanford University School of Medicine at San Francisco, and served his internship at the University Hospital in that city.

Dr. John C. Shrader of Fort Dodge, gave an address before the Woman's Auxiliary to the Webster County Medical Society on Monday, October 7.

Dr. Stanley N. Anderson of Sioux City, has moved to Onawa where he will take over the practice of Dr. Felix Scheffler, who is ill. Dr. Anderson was recently graduated from the College of Medicine of the State University of Iowa, and comes to Onawa from Sioux City, where he was assisting Dr. J. M. Krigten, deputy coroner.

Dr. Florence Johnston of Cedar Rapids, appeared on the program of the Eighth District Federation of Woman's Clubs at Jefferson on October 10, speaking on the subject of "Birth Control."

Dr. Helge Borre, formerly of Shelby, has moved to Audubon where he will continue the practice of medicine.

Dr. R. H. McBride of Sioux City, was the speaker for the meeting of the Parent Teachers Association at Alta on October 15. His subject was "Children's Diseases."

Dr. Walter Scott, a recent graduate of the University of Michigan Medical School at Ann Arbor, has moved to Sioux City where he will be associated in the practice of medicine with Dr. Arch F. O'Donoghue. Dr. Scott interned for two years at St. Vincent's Hospital in Toledo, and has just completed three years special training at the University Hospital in Iowa City.

Dr. W. A. Rohlf of Waverly, was guest speaker of the Commercial Club at Alta Vista on October 14. "Medical Superstitions" was the subject of his talk.

Dr. J. W. Eckstein, who has practiced medicine in Central City for the past several years, has moved to Ryan where he will continue his practice.

Dr. Peirce D. Knott of Sioux City, spoke on "Guarding the Health of your Child," before the Woman's Club of Ireton, on October 15.

Dr. R. D. Bernard of Clarion, spoke on "Contagious Diseases and Their Prevention" before the Rake Parent Teachers Association on October 15.

Dr. G. G. Henning of Norfolk, Nebraska, has moved to Milford where he has associated himself for the practice of medicine with Dr. Q. C. Fuller. Dr. Hen-



ning was graduated from the State University of Iowa College of Medicine in 1929.

Dr. Karl R. Werndorff of Council Bluffs, gave a talk on the "Causes and Prevention of Foot Disorders" before the Parent Teachers Association of Denison, on October 22.

Dr. Fred Moore of Des Moines, spoke before a combined meeting of the Parent Teachers Association of Jefferson, Jackson and Grant Schools, and the Woman's Auxiliary to the Muscatine County Medical Society, in Muscatine, October 23. His subject was "Control of Contagious Disease Among Children."

Dr. H. J. Brackney of Sheldon, appeared on the program of the Medico-Military Training Unit at the Mayo Clinic at Rochester, October 10, speaking on "Transportation of Sick and Wounded by Ordinary Train."

Dr. E. A. Nash, formerly of Greeley, has moved to Everly, where he will continue the practice of medicine.

Dr. Walter A. Anneberg was the speaker for the Harlan Chamber of Commerce at its meeting on October 3. His subject was "What Price Health."

Dr. W. E. Sanders of Des Moines, talked before a meeting sponsored by the Guthrie Center Woman's Club on October 21. Dr. Sanders spoke on "Cancer," and conducted a round table discussion on the subject.

Dr. Jeannette Dean-Throckmorton of Des Moines, librarian of the State Medical Library is slowly recovering from an extended illness which began with an attack of diphtheria on September 1. Paralysis of the throat developed, after which serious eye complications occurred. Latest reports would indicate that healing of the cornea is slowly taking place, and Dr. Throckmorton hopes soon to be back at her work in the library.

#### MARRIAGES

The marriage of Miss Margaretta Williamson of Washington, D. C. and Dr. Harold L. Brereton of Emmetsburg took place in Thorndike-Hilton Memorial Chapel of the University of Chicago, Wednesday, October 16. Following a trip through Wisconsin and Minnesota, they will be at home in Emmetsburg where Dr. Brereton has been engaged in the practice of medicine for the past several years.

Thursday, October 17, Miss Helen Maneely and Dr. Howard G. Beatty of Creston were married at the home of the bride's parents in Afton. Following a tour of the southern states, they will be at home in Creston where the groom has been associated in the practice of medicine with his father for the past three years.

Miss Elsie Maddox and Dr. H. E. O'Neal of Tipton were married Sunday, October 13, at the home of the bride's parents near Beaman, Missouri. After a trip to New Orleans, they will return to Tipton where Dr. O'Neal has been practicing medicine for some time.

The marriage of Miss Katherine Kumpf of Los Angeles, California, and Dr. Harold T. Larsen of Fort Dodge, took place in Sioux City, Monday, October 7. Dr. and Mrs. Larsen will be at home in Fort Dodge, where the groom has been practicing medicine for the past two years.

#### DEATH NOTICES

Beitenman, Milton Edward, of Cascade, aged thirty-eight, died October 18, as the result of injuries sustained in an automobile accident. He was graduated in 1924 from Creighton University School of Medicine in Omaha, and at the time of his death was a member of the Jones County Medical Society.

Foxworthy, Oliver W., of Leon, aged eighty, died October 18. He was graduated in 1884 from the College of Physicians and Surgeons at Keokuk, and at the time of his death was a life member of the Decatur County and Iowa State Medical Societies.

Mangun, Harold Victor, of Ackley, aged thirty-five, died October 29, as the result of pneumonia. He was graduated in 1925 from the State University of Iowa College of Medicine, and at the time of his death was a member of the Hardin County Medical Society.

Parker, Garner Foresmann, of Pocahontas, aged forty-nine, died September 28, as the result of a lingering illness caused by x-ray burns. He was graduated in 1912 from The Hahnemann Medical College and Hospital in Chicago, and had long been a member of the Pocahontas County Medical Society.

#### ST. LOUIS MEDICAL SOCIETY INVITES IOWA PHYSICIANS

The Twenty-ninth Annual Meeting of the Southern Medical Association, the second largest medical organization in the United States, will be held in St. Louis, from November 19 to 22.

The unusual clinical facilities of the two medical schools and the numerous hospitals, combined with the high standing of the medical profession, and the excellent hotel accommodations, make St. Louis an ideal city for this medical gathering. Addresses and papers will be presented by distinguished clinicians, not only from the South, but from all over the United States as well as from several foreign countries.

The St. Louis Medical Society extends a very cordial invitation to all physicians in good standing in their state and provincial medical societies to attend this meeting.

# HISTORY OF MEDICINE IN IOWA

*Edited by the Historical Committee*

DR. FRANK M. FULLER, Keokuk

DR. JOHN T. McCLINTOCK, Iowa City

DR. PAUL W. VAN METRE, Rockwell City

DR. TOM B. THROCKMORTON, Des Moines

DR. WALTER L. BIERRING, Des Moines

DR. WILLIAM JEPSON, Sioux City

## A History of Medicine in Jefferson County, Iowa

JAMES FREDERIC CLARKE, M.D., F.A.C.S., Fairfield

(Continued from last month)

119. Mealey, Thomas S.: (1857-1876). Born in Pennsylvania in 1818. Attended the University of Pennsylvania Medical College and Jefferson Medical College and graduated in 1839. Was the first resident doctor of Walnut Township, of Scotch ancestry; a deacon of the Presbyterian Church and a strong prohibitionist. Coming to Pleasant Plain in 1857 he practiced there until his death in 1898, though he nominally retired in 1876. He owned 800 acres of land and farmed. Dr. Mealey was kind and generous and to his poor patients he took provisions (food) as well as medicine. His father, Dr. Samuel Mealey, was a physician and practiced in Washington County. Dr. Thomas Mealey was a strong character and made an impression on the community. He is yet a "tradition" there. Dr. Mealey was the only subscriber to a daily paper at Pleasant Plain during the War of the Rebellion and each day the citizens of the community congregated about while he read the news.

120. Miller, Thomas: (1870). No data. A contemporary of Dr. J. W. Hayden. Practiced at Wooster. Was not a graduate.

121. Miller, W. K.: (1872-1882). Few data. Graduated at Rush Medical College in 1872(?). Practiced in Libertyville ten or twelve years, and moved to Nebraska. Died in Texas in 1923.

122. Millikin, J. C.: Was not a graduate. Practiced in Fairfield before and after 1890. No data. Did not have the respect of his contemporary practitioners. We draw the mantle of charity over his memory.

123. Moechum: No data. Practiced in Abingdon. Mentioned in Dr. Shaffer's diary.

124. Mohr, Richard J.: (1861-1887). Born in Pennsylvania in 1841. Came to Fairfield with his parents in 1865 and was employed as a druggist's clerk. Here he began reading medicine and graduated from the Keokuk Medical College in 1861. Surgeon of the Tenth Iowa Infantry, 1862, when he was twenty-one years of age. Later he became brigade surgeon of the Fifteenth Corps, ranking as major. He went with Sherman to the sea and was in active service throughout the war. At the close of the war he returned to Fairfield where he practiced until he moved to Pasadena, California, in 1887, where he remained in practice until his death. February 23, 1900, fifty-nine years of age. In 1876 Dr. Mohr took a post-graduate course at the University of Pennsylvania. From 1881 to 1883 he lectured on anatomy in the

College of Physicians and Surgeons at Keokuk, Iowa, then the Medical College of the State University of Iowa. Dr. Mohr was an advanced microscopist and organized a microscopic society in Fairfield which won distinction. He was the leading surgeon of his time in Fairfield. His extreme cleanliness and neatness made his operative work approach the asepsis of later years. He corresponded with Robert Koch and other leaders in science. His quiet dignity and generosity won for him the respect of all who knew him. He is referred to at length in the preceding history. His widow furnished the operating room of the Jefferson County Hospital as a monument to his memory.

125. Moberly, J. T.: (1840-1861). Practiced in Fairfield and was the first resident physician of this county seat. He lived at what is now 500 S. Main st. and here died in 1861. The place and date of his birth cannot be learned. He is remembered as a tradition by many and must have been an outstanding citizen, who took part in all public affairs. It is recorded that he was "the truest and best of men"; that he was "humane"; that he was "careless of fees". The Indians called him "Big Medicine" and they bothered him so much that he was compelled to keep a big stick in his office. This he would shake at them and say "Puck-a-chee" (get out of here). Dr. Moberly was a good speaker and prominent in public meetings. He left a good name. He seems to have been a worthy leader of the profession into Jefferson County.

126. Moorman, Charles T.: (1885-?). Born in Ohio in 1836. Graduated from the Eclectic Medical College in Cincinnati in 1876. Practiced in Abingdon from 1885 until 1891 and then in Packwood until his death. Dr. Moorman was a Quaker. His parents came from Virginia. He was highly respected, used good judgment in his work and was quite successful. He treated Mrs. Salts in 1909 and she says "We always liked him but he was a bit rough in his talking and quick tempered." The writer remembers him as a good doctor; a man of character; an honored member of the profession.

127. Morris, Shelton: No data. Practiced in Abingdon very early.

128. Morris, John: No data.

129. Morrow, Augustus M.: (1894-1902). Born in 1871. Graduated from Keokuk Medical College about 1875. Practiced in Lockridge from 1894 to 1902 and then moved to Liberal, Kansas, where he had a private hospital. He took postgraduate work in Chicago in



1916. Dr. Morrow died in 1928. He was a progressive, active student, worked hard and had a large practice.

130. Moss, Oscar Burnham: (1893-1895). No data. Dr. Moss came to Fairfield in 1893, purchasing the practice of Dr. Eugene Campbell. Was a homeopath. Practiced here about two years and moved to Chicago where he wrote a book, the value of which cannot be learned. Later lived for a time in Burlington, Iowa.

131. Musselmann, James T.: (1852-1853). Born in Ohio. Came to Fairfield in May 1852. In October, 1853, rode horseback to Keokuk, Iowa, to procure medicines. From the exposure he developed pneumonia and died October 13. Such a journey was, in that day, a great undertaking. The Masonic order, after his death, passed resolutions expressing real respect.

132. Myers, J. L.: (1846-1876). Born in Virginia in 1814. Was not a graduate in medicine. He is mentioned in Dr. Shaffer's diary in 1852-53 and '54. Dr. Shaffer says in one place "Doctors M. and P. put a spring truss on a varicocele." No other data of his work can be found. He was a "botanic doctor," collected local plants, and prepared his own medicines.

133. Myers: (1854?). No data. Mentioned by Dr. Shaffer in 1854. Was at one time employed by the county authorities to care for all smallpox cases. A son of Dr. J. L. Myers and an "eclectic" practitioner.

134. Myrick, Eliel Grant: (1907 to this date). Born in Iowa in 1869. Graduated from Keokuk Medical College in 1904. Practiced in Des Moines one year and came to Fairfield in 1907. Dr. Myrick was never admitted to membership in the County Medical Society. He underbid other doctors in his professional fees, accepted a position with a notorious "cancer specialist" and has been in many ways out of harmony with the local medical profession. Dr. Myrick is a "jolly good fellow" liked by a considerable number of Jefferson County people and has a rather large practice. In the World War he was a First Lieutenant in a Base Hospital at Fort Riley, Kansas. His newspaper advertisements have been enjoyed by the doctors of Fairfield and he is the only doctor of the county who has "made" the Tonics and Sedatives column of the Journal of the American Medical Association.

135. Nelson, H. P.: (1884-?). Practiced in Fairfield. No data. Was associated with Dr. Roop.

136. Norris, A. M.: Practiced medicine in Buchanan Township. No data.

137. North, F. R.: (1911-1919). Born in Iowa, 1876. Two years Howe's Academy, Mount Pleasant Normal Teaching Course. Taught several years, then studied medicine. Practiced in Packwood from 1911 to 1919, then moved to Winfield, Iowa, where he now lives and practices. Graduate Keokuk Medical College, 1904.

138. North, Norman Theodore: (1927). Born in 1895. Graduate from the Northwestern University, Chicago, in 1925. Moved to Florence, Kansas. Dr. North was well educated and had an attractive personality. He did not gain a large practice and decided to try another location.

139. Nucent, E. G.: No data. Practiced in Batavia. Graduated from the Cincinnati Botanical School in 1858.

140. Oliver, J. W.: (1867-1896). Born in Pennsylvania in 1837. Graduated from the University of Pennsylvania in 1866. Was a graduate of the Washington and Jefferson College in 1858. Studied medicine with Dr. Wm. K. Blatchley in Pennsylvania. Taught school for a time. In the Civil War he was with Company K, Eighth Pennsylvania Infantry one year, and was discharged because of a wound. He then reenlisted in Company C, Twenty-second Pennsylvania Cavalry. Practiced in Brookville from 1867

to 1869 and then moved to Fairfield where he lived until his death in 1912. Dr. Oliver was a member of the pension board for thirty years. Was well read and always remained a student, but his practice was never large. He failed to apply his knowledge to the practical question of the moment in a way to win patients. He was honored and respected as a man.

141. Oliver, James M.: (1884-1886). Born in Pennsylvania. Graduated from Rush Medical College, Chicago, 1886. Practiced in Libertyville from 1884 to 1886. Moved to Arkansas in 1886. Was a nephew of Dr. J. W. Oliver of Fairfield. There was a question of the legality of Dr. James Oliver's practice in 1884-86 and he was prohibited from practicing. He then went to Rush Medical School.

142. Orr, J. T.: (1847-1860). No data. Was associated for a time with Dr. John T. Huey in 1847. Practiced in Fairfield from 1847 to 1860.

143. Packwood, S. D.: (1890). Born in 1866. Graduated from an Eclectic College in Cincinnati in 1889. Practiced in Batavia about 1890 and after. No data.

144. Parks, W. S.: (1930). Born 1859. Graduated from Iowa State University of Medicine 1885. Practiced for years in Brighton, Iowa, and for a time in Packwood, Jefferson County, about 1930.

145. Parrott: (1853). No data. Mentioned by Dr. Shaffer in his diary.

146. Perry, Mary G.: (1890). No data. Dr. Perry was one of the few women doctors of Jefferson County. She had pneumonia in Fairfield. Moved to the east and died somewhere in the eastern states. She was not long in Jefferson County.

147. Plowman, E. T.: (1932 to this date). Born in Kansas in 1904. Studied in Kansas City College. Graduated from the College of Medicine, University of Iowa in 1930. Was an interne in the Mercy Hospital in Des Moines, Iowa, 1930 and 1931, and began practice in Mt. Pleasant, but soon moved to Lockridge in 1932. Having an excellent education and pleasing personality his success seems assured.

148. Porter, Henry C.: (1896-1912). Born in Kentucky in 1863. Graduated from Rush Medical College in 1890. Studied at Rush in 1883 and 1884. Practiced until 1889 and then returned to medical school for his final year. Studied with his brother Dr. J. W. Porter of Hedrick, Iowa, and practiced under him for a year between courses. Dr. Porter practiced in Batavia from 1896 to 1912 when he moved to Ottumwa where he is now living.

149. Powers, M. L.: (1896). Came to Iowa from Vermont and practiced in Pleasant Plain until 1896. Was highly respected. Died in Pleasant Plain in 1896 and his place was taken by Dr. Albert Conrad.

150. Prentice, George Lee: (1932 to this date). Born in Murray, Iowa, in 1878. Graduated from Rush Medical College in Chicago in 1900. Served as captain in The Medical Corps, United States Army in the World War. Located in Packwood, Jefferson County, Aug. 15, 1932 and is now practicing there.

151. Raiff: (1853). No data. Mentioned by Dr. Shaffer in his diary.

152. Ramgue: (1853). No data. Called in consultation by Dr. Shaffer.

153. Ratcliff, Bruce Samuel: (1884). Born in Fairfield in 1859. Graduated from College of Physicians and Surgeons at Keokuk in 1884. Began practice at Perlee in 1884, but after six months moved to Eldon, Iowa. Did not practice medicine long but became a traveling salesman and so continued for years. He is now living in Fairfield engaged in the restaurant business, a respected citizen, known to only a few as a graduate physician.

154. Ream, Henry: (1845-1872?). Born in Pennsylvania of Dutch ancestry. Lived for a time in Hagerstown, Maryland, and came to Abingdon in



1845 practicing there until his death. Dr. Ream was the first doctor to live in the western part of Jefferson County. He was a "botanic doctor" and a "Campbellite minister." He kept a tavern of excellence called the "Maryland House" which was a large colonial house with a fireplace in every room. He had a drug store and managed a farm of 300 acres. A unique thing for Jefferson county, he drove a team of reindeer or elk. Dr. Ream was a remarkable character and a worthy man. He built the first Campbellite Church in the county. He died at the age of seventy-two years. The doctor had a habit of carrying red pepper in his pocket and putting some in his coffee when he had meals away from home. He was one of the outstanding characters of early Jefferson county life. His son became a doctor.

155. Ream, Daniel: (1848-1852). Born in Maryland in 1830, son of Dr. Henry Ream. Came to Abingdon with his parents when sixteen years of age. Studied with his father and began practice when eighteen years of age. Attended the Eclectic Medical Institute of Cincinnati, Ohio, in 1852 and after one course of lectures went to California where he died at the age of seventy-seven years, a highly respected citizen and doctor (referred to at length in the preceding history).

156. Ricksher, Charles: (1919-29). Born in Fairfield in 1879. Graduated from Parsons College in 1901. Graduated in medicine from Johns Hopkins University in 1905. Assistant physician Sheppard and Enoch Pratt Hospital 1905 and 1906. Studied in Munich and Zurich during 1906 and 1907. Assistant physician Danvers, Massachusetts, State Hospital 1907 to 1910. Chief of Clinic New York Neurological Institute 1910 and 1911. Practiced in Fairfield 1919-29. Clinical director, Connecticut State Hospital, 1929 to this date.

157. Riggs, Jesse T.: (1881-84.) Born about 1850 in Illinois. Graduated from Rush Medical College in 1881. Practiced in Abingdon three years. He had a large practice but was not a good business man. He moved in 1884 to Lynnville, Illinois, and died in 1895.

158. Robbins: (1856.) Practiced in Batavia. No data.

159. Robinson, C. W.: (1853.) No data. Mentioned in Dr. Shaffer's diary in 1853. Practiced in Buchanan township.

160. Roop, Jonas: (1881-84.) Born in Maryland in 1828. Graduated from Cincinnati Medical College. Was a partner of Dr. Nelson while in Fairfield where he practiced from 1881 to 1884 or later. Went from Fairfield to Chicago. Dr. Roop died at Rochester, Minnesota.

161. Sage: (?) No data. Practiced in Perlee.

162. Shaffer, Henry M.: (1889?) No data. Practiced in Batavia. Moved to Ohio where he was killed in an accident.

163. Schneider, F. W.: (1856.) No data. Graduated in Gottingen, Germany.

164. Shafer, H. M.: (1867?) Born in Ohio in 1837. Graduated from the Chanty Hospital College of Cleveland in 1867. He had previously graduated from the University College of Wooster, Ohio. Practiced at Batavia for a time about 1867.

165. Shaffer, Joshua Monroe: (1852-74.) Born in Washington, Pennsylvania, 1830. Studied medicine with his brother in Elizabeth, Pennsylvania, in 1849, and graduated from the College of Medicine of the University of Pennsylvania in 1851. Came to Fairfield in 1852 as a partner of Dr. Huey. In 1862 he was given the honorary degree M.D. from the University of Iowa. Moved to Keokuk, Iowa, in 1874 where he died March 26, 1913. Dr. Shaffer was one of the rarest men of Iowa and had a distinguished career. He kept a daily record of his work and this diary, now preserved in the Keokuk Library, forms the basis of the early part of the preceding history.

For his non-professional activities Dr. Shaffer was probably the most widely known doctor who has ever lived in Jefferson county. He was the most versatile in his avocations.

166. Sheely: (1860?) No data. He practiced at Wooster before 1861.

167. Shelley: No data. Practiced in Abingdon at a very early date.

168. Sherlock, Peter J.: (1910-24.) Born in Knoxville, Iowa, 1885. Graduated from the College of Medicine, Iowa State University in 1910, and began his practice at Lockridge, Iowa. Dr. Sherlock was a well educated, congenial gentleman liked by all doctors who came in contact with him. He had good professional judgment, was a good student, and was successful in his practice. He died at Hot Springs, Arkansas, in 1926.

169. Sloan, N. A.: (1902-28.) Born in New York in 1863, the son of a doctor. Graduated from the Syracuse Medical College in 1888. After practicing in New York state he came to Fairfield in 1902. In 1928 he moved to Brighton, Iowa. In the latter part of his stay in Fairfield Dr. Sloan worked for the Loudon Machinery Company as time keeper and did not practice.

170. Smith, John Jackman: (1837-73.) Born in Virginia in 1780. His father was a slave holder and John inherited 200 slaves to whom he gave their freedom because he did not believe in slavery. In 1803 he was engaged to go with Lewis and Clark on their exploring expedition. Severe illness compelled him to give up this journey—a life long regret. He came to Liberty township, Jefferson county, in 1837. He was not a graduate in medicine. He had a lancet (now owned by his great-great-grandson) and a "mad stone," and his services were in demand for miles in all directions from his home. He was the first settler in Liberty township. "Dr. Smith" was a wealthy man for his day and it is thought he made no charge for his services. He made his money in Ohio and brought it to this county—all in gold—in an old cowhide trunk. He purchased 5,000 acres of land in Jefferson county for \$1.25 an acre. Dr. Smith was a large portly man weighing three hundred pounds. He was a justice of the peace for twenty years. He was a friend of Chiefs Blackhawk and Wapello. A crossing of Cedar Creek (now bridged) is still called "Smith's Ford." Dr. Smith was elected a county commissioner and helped lay out Fairfield in 1839. He died in 1873 at the age of ninety-three years and is buried at Libertyville.

171. Smith, Frank R.: (1876-91.) Born in Van Buren county, Iowa, in 1851. Studied with Dr. R. J. Mohr. Graduated from the Keokuk Medical College in 1876. Began practice in 1876 in Pleasant Plain and then moved to Fairfield. In 1891 because of failing health Dr. Smith moved to Denver and later to Grand Junction, Colorado, where he practiced seventeen years. He died in California in 1912. Dr. Frank Smith was a rare doctor in that he liked to treat fractures. His greatest delight was in the care of fracture cases and he was very skillful in this treatment. He was so interested in such cases that he once got permission to disinter a body, buried several months, to study a fracture.

172. Snook, Calvin: (1872-1906.) Born on a farm near Fairfield in 1848 he was educated in the schools of Fairfield. He read medicine with Dr. N. Steele in Fairfield and took a course of lectures in the College of Physicians and Surgeons, Keokuk, Iowa, in 1869. Later he attended the Iowa State Medical College at Iowa City. He began practice at Moulton, Iowa and came to Perlee in 1872. He moved to Fairfield in 1879 and practiced here until his death in 1906. He was for eight years the health officer of Fairfield. Dr. Snook was local surgeon for the C. B. & Q. and the C. R. I. & P. Railway Companies for many years,



showing that he was held in high regard by these corporations. A quiet, reserved man of good education he was respected by all. He had a large practice, probably as large as any doctor in Jefferson county. Dr. Snook had good judgment in public affairs and was generous of his time when he could help the community. He was too kind hearted and generous in his own private business and like so many good doctors left a small estate. Too often the quality of kind hearted sympathy in a doctor allows a community to take advantage of him and to leave his bills unpaid. Dr. Snook never took a vacation in his life. He did not know how to play. His recreation from his medical and surgical work was his labors for the community. Such men as Dr. Calvin Snook make a profession of which one is proud to be a member. Dr. Snook died in 1906 at fifty-eight years of age.

173. Stark, Duane: (1839?) No data. He was the first doctor to practice in Locust Grove township. He was associated with Dr. Cole. Dr. Shaffer mentions him in 1852 in a case related in the preceding history.

174. Steele, N.: (1848-1866?) No data. His name is on a list of voters in Fairfield in 1848. He was one of the leading doctors in Fairfield in 1852 and is often spoken of in Dr. Shaffer's diary. He is said to have graduated in Keokuk in 1866.

175. Stephenson, Robert Bruce: (1886-1934.) Born on a farm in Jefferson county in 1857. Graduated in medicine from the Sterling Medical College of Columbus, Ohio, in 1885. Dr. Stephenson was the first doctor resident in Lockridge from 1886 to 1893. He then went to Mystic, Iowa, as a surgeon for the mines, but returned to Jefferson county and located at Libertyville in 1895 where he practiced until his death in 1934. Dr. Stephenson was a genial gentleman respected in his community. His greatest fault, shared by many of the older doctors, was in making his charges for his services far too small.

176. Stepp, James K.: (1915-28.) Born in South Carolina in 1890. Graduated in medicine from the University of Georgia in 1911. Practiced in Georgia and in the United States Army Medical Corps in 1915. He located in Linby, Jefferson county, in 1915 and moved to Packwood in 1926, after which he left the county moving to Jesup, Iowa, where he is still practicing.

177. Stevenson, William: (1836?) Though living in Mount Pleasant, Henry county, Dr. Stevenson is supposed to have been the first doctor to attend the sick in what is now Jefferson county in 1836. His patient was in Round Prairie township. He probably also had patients in Buchanan, Lockridge and Cedar townships.

178. Stever, David: (1876-93.) Born on a farm near Fairfield in 1848 of German ancestry. Studied medicine with Dr. P. N. Woods and graduated from the College of Physicians and Surgeons at Keokuk in 1876. Dr. Stever began his practice of medicine in Perlee in 1876 but soon moved to Fairfield where he practiced until his death in 1893. Several successful doctors began their medical studies in Dr. Stever's office. His graphic, minute descriptions of pathologic conditions long before the days of Roentgen were of great interest to his colleagues. Some of these diagnoses are noted in the preceding history.

179. Stewart, Edgar Allen: (1912-1914.) Born in Illinois in 1881. Graduated from the University of Iowa, College of Medicine in 1912. Practiced in East Pleasant Plain from 1912 to 1914. During the World War he served as captain in the United States Army Medical Corps. Dr. Stewart is now in the United States Veterans Bureau service in Indiana.

180. Stoner, C. E.: (?) Practiced in Perlee. Came from Illinois and moved from Jefferson county to Des Moines, Iowa.

181. Strickling, Frank E.: (1908.) Born in 1886.

Graduated from the Keokuk Medical College in 1907. Practiced in Batavia one year and moved to Birmingham, Van Buren county.

182. Sutton, S. C.: (1878.) Born in Jacksonville, Illinois. Graduated from the University of the City of New York in 1878.

183. Stuplo: (1854.) No data. Mentioned in Dr. Shaffer's diary.

184. Tallman, Cameron C.: (1903 to this date.) Born in Keota, Iowa, in 1875. Graduated from Rush Medical College, Chicago, in 1900 and located in Fairfield in 1903 where he has been in active practice to this date. A genial, companionable man of good education Dr. Tallman is liked by everyone.

185. Taylor, Samuel W.: (1853-1876.) Born in Connecticut in 1817. Took a course of lectures at the Keokuk Medical College in 1854 and 1855. Dr. Taylor's fees were fifty cents for an office call and medicine; for an obstetric case three to five dollars. Money was scarce and he accepted many things in payment for his services. He was associated with Dr. Cottle. Dr. Taylor died in 1899.

186. Thayer: (?) No data. One of the first doctors to practice in Perlee.

187. Thomas: (?) No data. Practiced at Glasgow.

188. Todd, Victor C.: (1898-1903.) Born in Brigh-ton, Iowa, in 1874. Graduated from the College of Medicine University of Iowa in 1898 completing a four years course in liberal arts and medicine in three years. Practiced in Pleasant Plain from 1898 to 1903 when he was admitted to the Insane Hospital at Mt. Pleasant as a patient and died there in 1910.

189. Tracy, F. A.: (1869?) Born in New York state in 1824. Graduated in medicine at Geneva Medical College. Came to Brookville in 1869, and practiced medicine there. No further data obtainable. He had a son who became a doctor.

190. Tuttle, Molly: (?) Was secretary to Dr. P. N. Woods for a time. Later she graduated in medicine and practiced in Fairfield. No data obtainable.

191. Vaughn, J. M.: (1849-?) No data. He made himself known as a "physician, surgeon, and oculist." Practiced in Fairfield. This is the only instance at that date of a doctor who claimed to be a specialist, and he evidently was not one.

192. Walker, Peter: (1854-1863.) Born in 1814 in Ohio. A long line of ancestors were doctors. Came to Libertyville in 1854. Dr. Walker represented Jefferson county in the state legislature in 1861. Was assistant surgeon of the Thirtieth Iowa Volunteers in 1863. Died in 1863.

193. Wall, Ora F.: (1893-1898.) Graduated in medicine from the Hahnemann College in Chicago in 1893. Practiced in Fairfield from 1893 to 1898 and moved to Colorado. She married a Mr. Roberts in 1900 and is now Dr. Roberts. Now lives in New York state.

194. Wall, Jeremiah: No data. Practiced in Jefferson county.

195. Ward, A. G.: (1870-1889.) Born in London, England, in 1829. Came to Canada when nineteen years of age. Studied medicine with his father-in-law and graduated from the University of Michigan School of Medicine in 1860. Dr. Ward practiced for a time in Michigan and moved to Libertyville, Iowa, in 1870 where he practiced until he moved to Fairfield in 1882. Dr. Ward practiced in Fairfield until his death in 1889.

196. Ware, J. C.: (1848-1875.) Was the first physician to reside in Penn township. A list of voters shows him to have been in the county in 1848. Dr. Shaffer's diary shows him to have been in Fairfield from 1852 to 1854, and other data show that he was in Fairfield in 1875.

(To be concluded next month)

# THE JOURNAL BOOK SHELF

## BOOKS RECEIVED

- THE AMERICAN ILLUSTRATED MEDICAL DICTIONARY**—By W. A. Newman Dorland, M.D., Seventeenth edition, revised and enlarged. Octavo of 1573 pages with 945 illustrations. W. B. Saunders Company, Philadelphia and London, 1935. Price, \$7.50.
- ANNUAL REPRINTS OF THE REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR 1934**, with the comments that have appeared in *The Journal*. Press of the American Medical Association. Chicago, 1935. Price, \$1.00.
- ARTHRITIS AND RHEUMATOID CONDITIONS**—Ralph Pemberton, M.D., professor of medicine, Graduate School of Medicine, University of Pennsylvania. Second edition, thoroughly revised. Illustrated with 69 engravings. Lea & Febiger, Philadelphia, 1935. Price, \$5.00.
- THE AUTONOMIC DISEASES OR THE RHEUMATIC SYNDROME**—By T. M. Rivers, M.D. Dorrance & Company, Philadelphia. Price, \$3.00.
- CLINICAL LABORATORY METHODS AND DIAGNOSIS**—By R. B. H. Gradwohl, M.D., director of laboratories, St. Louis County Hospital. With 328 illustrations and 24 color plates. C. V. Mosby Company, St. Louis, 1935. Price, \$8.50.
- CLINICAL MANAGEMENT OF SYPHILIS**—By Alvin Russell Harnes, M.D., chief of Congenital Luetic Clinic, New York Hospital. The Macmillan Company, New York, 1935. Price, \$1.50.
- THE CRIPPLED AND THE DISABLED**—By Henry H. Kessler, M.D., Newark, New Jersey. Columbia University Press, 2960 Broadway, New York City, 1935. Price, \$4.00.
- DISEASES OF THE NERVOUS SYSTEM**—By Smith Ely Jelliffe, M.D., formerly professor of psychiatry, Fordham University, New York; and William A. White, M.D., superintendent, St. Elizabeth's Hospital, Washington, D. C. Sixth edition, 1175 pages, illustrated with 497 engravings. Lea & Febiger, Philadelphia, 1935. Price, \$9.50.
- DISEASES OF THE SKIN**—By Richard L. Sutton, M.D., professor of dermatology, University of Kansas; and Richard L. Sutton, Jr., M.D., assistant in dermatology, University of Kansas. Ninth edition, revised and enlarged, with 1310 illustrations and eleven colored plates. C. V. Mosby Company, St. Louis, 1935. Price, \$12.50.
- THE DOCTOR AND THE PUBLIC**—By James Peter Warbasse, M.D., Brooklyn, New York. Paul B. Hoeber, New York, 1935. Price, \$5.00.
- ELECTROTHERAPY AND LIGHT THERAPY**—By Richard Kovacs, M.D., clinical professor and director of physical therapy, Polyclinic Medical School and Hospital, New York. Second edition, enlarged and thoroughly revised. Octavo of 696 pages, illustrated with 263 engravings. Lea & Febiger, Philadelphia, 1935. Price, \$7.50.
- EMOTIONS AND BODILY CHANGES**—By H. Flanders Dunbar, M.D., Ph.D., departments of medicine and psychiatry, Columbia University, Columbia University Press, New York, 1935. Price, \$5.00.
- INTERNATIONAL CLINICS**—Edited by Louis Hamman, M.D., Johns Hopkins Hospital, Baltimore. Volume II, Forty-fifth Series. J. B. Lippincott Company, Philadelphia and London, 1935.
- INTERNATIONAL MEDICAL ANNUAL**—A Year Book of Treatment and Practitioner's Index. Edited by H. Letheby Tidy, M.D., and A. Rendle Short, M.D. William Wood and Company, Baltimore, 1935. Price, \$6.00.

## BOOK REVIEWS

### PERIODIC FERTILITY AND STERILITY IN WOMAN

**A Natural Method of Birth Control**—By Professor Hermann Knaus, head of the clinic for gynecology and obstetrics, of the German University of Prague. With 64 illustrations and 12 tables. Wilhelm Maudrich, Publisher, Vienna, 1934. Price, \$6.50.

I consider this monograph a very valuable contribution to medicine. Knaus' work was started in 1924, but it was not until many years later that he published any of his investigative work. This was due to his extreme caution in not propounding any theory which was not based upon sound scientific fact. He reviews the work of Ogino and shows that while their determinations are practically the same, they arrived at them from a little different angle, and he gives Ogino due credit for his monumental research work in this field.

Knaus reviews in detail the previous work that had been done on the lower animals from the standpoint of sterility and fertility, and by closely checking pregnancy in the human being, shows conclusively that there is a definite period in the menstrual cycle when conception cannot take place. He proves that there is a definite period of five days between menstruations in which ovulation takes place and during which time fertilization can occur. He states that this fertile period can only be estimated when one

has an accurate knowledge of the menstrual cycle, that is, twenty-eight, thirty, thirty-two days, etc., and he figures the beginning of ovulation as fifteen days before the onset of the next menstrual period, regardless of the cycle. He emphasizes the fact that fertility is restricted to twenty-four hours from the time of ovulation and he also notes that the spermatozoa loses its fertility in less than forty-eight hours. The sum of these two time factors gives at most a period of five days during which a woman is capable of conceiving, the day of ovulation and three days just preceding it; he adds an extra day to make certain that there is no error in calculation. He concludes that ovulation occurs regularly and spontaneously on the fifteenth day before menstruation and he claims that this law holds good for all types of cycles. The ovulation day of an irregular cycle is, therefore, that period of time which falls between the two ovulation dates of the shortest and longest cycles respectively, the cycles having been recorded carefully for at least twelve months. He cleverly refutes those who criticize his work and who cite instances in which his method of computation failed, by showing that the menstrual cycle was not correctly figured in each case.

No doubt this work will prevent the tremendous abuses which are now taking place in all countries of the world in the dissemination of knowledge of the instruments of artificial birth control and which he rightly states can only result in physical and mental



disturbances. He also mentions the legal significance of his work by showing how it is possible to establish the paternity of an illegitimate child. Dr. Knaus insists that the computation of the fertile period should not rest with the patient but should be figured accurately by a physician who is familiar with this work. This book would be a real addition to the library of any physician who is interested in this subject.

H. A. C.

#### REPORT ON SEVENTH INTERNATIONAL CONGRESS OF MILITARY MEDICINE AND PHARMACY

Held in Madrid, Spain, May-June, 1933.

By Captain William Seaman Bainbridge,  
M.C.-F., U. S. N. R. George Banta Publish-  
ing Company, Menasha, Wisconsin, 1934.

Captain Bainbridge attended the International Congress of Military Medicine in Madrid, Spain, May 29-June 3, 1933, and presents in this volume a running account and synopsis of the papers given. Nearly all foreign governments had representatives at the meeting. The principal points stressed were:

1. Prophylactic use of smallpox and typhoid-paratyphoid vaccination.
2. Mobilization of products for use during war.
3. Organization of the Red Cross.
4. Prophylactic tetanus serum.
5. Organization of the army for surgical casualties.
6. The proper food supply to furnish adequate vitamins and calories.
7. The study of glanders and "habronenosis" by the veterinary division.

The volume explains the organization of an international office of Medico-Military Documentation, which is at the disposal of the participating nations. The volume should be of interest to anyone engaged in military medicine.

D. M. B.

#### MORTALITY AMONG PATIENTS WITH MENTAL DISEASE

By Benjamin Malzberg, Ph.D., New York  
State Department of Mental Hygiene, Al-  
bany, New York. State Hospital Press,  
Utica, New York, 1934.

Knowing something about the manner in which causes of death are stipulated in some state hospitals, the reviewer is loathe to give much credence to statistics compiled from that source. This compilation is further vitiated by the fact that it was made by a non-medical man. Witness the following statement: "... it will be well, however, to emphasize the fact that the leading cause of death among patients with mental disease is not tuberculosis, but diseases of the heart. Consequently, as in the general population the great problem is the control of diseases of the heart and other circulatory disorders"; as though heart disease were *sui generis*, an entity in itself.

Pneumonia is the second leading cause of death and general paresis third. Among the various psychoses one notices a marked variation as to causes of death. Thus dementia praecox leads the list in death rates from tuberculosis; but whether the latter is due to the fact that the praecox patients are retained for such long periods of time under a hospital regime that might be unhygienic, or whether it is evidence of an inherent constitutional predisposition, one is unable to say. The writer seems to favor the latter view, while the reviewer, the former. In the manic-depressive psychoses there is an unusually high death rate from "exhaustion," while a "striking phenomenon is the low death rate from cancer, cerebral hemorrhage, nephritis, and diabetes."

This book would appeal chiefly to one interested in vital statistics.

M. S.

#### STAMMERING AND ALLIED DISORDERS

By C. S. Bluemel, M.D., F.A.C.P.,  
M.R.C.S., (Eng.). The Macmillan Com-  
pany, New York, 1935. Price, \$2.00.

Anyone interested in disorders of speech should read this little book. The subject matter is well arranged, the style and expression are clear. The author's theory of stammering is founded on a physiologic basis, "the conditioned reflex." This is well described and illustrated by the experiments of the physiologist Pavlov, which he cites in support of his theory. The development of speech is treated as a conditioned reflex, and the influence of inhibition on the conditioned reflex is discussed. From this, the author proceeds clearly to the theory that stammering is based upon incomplete conditioned reflex plus inhibition. Other theories of disorders of speech are analyzed, faults are pointed out, and the author selects certain things from each that are consistent with his theory. The preface states that "so far as possible, the subject is treated in non-technical language in order that the book may be available to speech teachers, stammerers, and parents, and not merely to those whose interest is academic." The author has succeeded well in this objective. From a technical point of view the book is excellent; decent size type on good soft paper—no glare.

F. M.

#### THE YEAR BOOK OF OBSTETRICS AND GYNECOLOGY FOR 1934

Edited by Joseph B. DeLee, M.D., profes-  
sor of obstetrics, University of Chicago Med-  
ical School; and J. P. Greenhill, M.D., asso-  
ciate professor of gynecology, Loyola Uni-  
versity Medical School. The Year Book Pub-  
lishers, Chicago, 1935.

Like its predecessors, this book gives a comprehensive summary of all the literature on obstetrics and gynecology for the year 1934 with comments by the

editors, together with the name and date of the journal in which the complete article can be found. However, the resumé is so complete that it is rarely necessary to refer to the original article. The book is well enough indexed to facilitate finding the desired article easily. This is a most valuable book for the busy doctor who still wants to keep up to date on this subject.

F. W. R.

### MARTIN'S PRINCIPLES AND PRACTICE OF PHYSICAL DIAGNOSIS

Edited by Robert F. Loeb, M.D., associate professor of medicine, College of Physicians and Surgeons, Columbia University. From the authorized translation by George J. Farber, M.D. Thirty illustrations in the text. J. B. Lippincott Company, Philadelphia and London, 1935. Price, \$2.00.

This little book is a translation from the German and of the course embodies the usual subject matter common to works on physical diagnosis. It is written with clarity and precision, is well ordered and in the mind of the reviewer is a first class book.

This is hardly the place to make a preachment on the value of physical diagnosis but we all know that too large a percentage of errors in diagnosis are due to ignorance of, or neglect in, the application of the rules of this very important subject. In these days of very highly specialized laboratory technic we are a little too prone to lean on the laboratory for help rather than use our native equipment in the approach and solution of our medical problems.

To emphasize this latter statement I quote from the author's foreword "The physician must exhaust all diagnostic possibilities. He must see, listen, observe, palpate and auscultate to the limit of his ability. He must be critical of all that he perceives. He must employ all his senses to the utmost. \* \* \* All medical thought must take into consideration the intimate interweaving of the physical and psychic processes which together form the mosaic of the disease state. Appreciation and understanding of this relationship constitute the culmination of medical knowledge."

F. R. H.

### DISEASES OF THE SKIN

By Richard L. Sutton, M.D., professor of dermatology, University of Kansas; and Richard L. Sutton, Jr., M.D., assistant in dermatology, University of Kansas. Ninth edition, revised and enlarged, with 1,310 illustrations and eleven colored plates. C. V. Mosby Company, St. Louis, 1935. Price, \$12.50.

The literature in dermatology has been signally furthered by the voluminous and exact writings of Dr. Richard L. Sutton. In compiling this textbook with the cooperation of his son as co-author, Dr. Sut-

ton has brought together the wealth of his experience and study in a single volume of such scope that it may be considered encyclopedic in character. Recognizing the full significance of the visual appearance of skin lesions, Dr. Sutton has generously illustrated his volume with a large number of well chosen photographs from his own collection.

Under eleven general groupings, the authors present all of the more common and most of the rare dermatologic conditions, discussing each from the standpoint of etiology, diagnosis, prognosis, and treatment. Prescriptions are given in full where a medication not in common use is suggested. A modest bibliography follows those sections where in the author's opinion additional or advanced reading is indicated. This remarkable and outstanding volume on dermatology bears our unqualified endorsement.

### THE 1934 YEAR BOOK OF NEUROLOGY, PSYCHIATRY AND ENDOCRINOLOGY

Edited by Hans H. Reese, M.D., Harry A. Paskind, M.D., and Elmer L. Sevringhaus, M.D. The Year Book Publishers, Chicago, 1935. Price, \$3.00.

The 1934 Year Book presents the neuropsychiatric developments of the past year through abstracts of leading articles. It is a useful reference work and provides an excellent starting point for a review of the literature on any given subject.

Encephalitis, because of the unusual activity in the study of that disease, is given more space than usual. Also there is a noticeable trend toward a consideration of the more basic physiochemical and pathologic-anatomic approaches to neuropsychiatric problems.

It is regretted that Dr. Bassoe has found it necessary to give up the editorship; however, it is apparent that Drs. Reese and Paskind, two of the outstanding younger neurologists will maintain the high editorial standards already set.

An approved innovation is the grouping of all endocrinologic material in a separate section edited by Dr. Sevringhaus.

R. C. D.

### KEY TO SYMPTOMATOLOGY

Book I, Ophthalmologic Diseases. By D. D. Stonecypher, Nebraska City, Nebraska. Key System, Publishers, Nebraska City, Nebraska, 1935. Price, \$10.00 a volume.

At tremendous pains and apparently as a result of extensive study Dr. D. D. Stonecypher of Nebraska City, Nebraska, has prepared a series of copyrighted diagnostic cards covering ophthalmologic diseases and diseases of the ear, nose and throat. The cards are designed to indicate quickly the diagnostic possibilities where certain symptoms are presented. The symptoms presented by the patient call for the withdrawal of certain cards from the case, and these cards are then superimposed on a master card, which



through appropriately located windows designates the diagnostic possibilities for this particular train of symptoms. The cards are substantially made and conveniently arranged in cases and insofar as we are able to judge, the work of compilation appears accurately performed.

We feel that there is always a danger in the use of short cuts to diagnosis. In the first place the physician may rely too much upon the system and neglect features of the case which would otherwise receive a more appropriate consideration. In the second place, the efficiently trained specialist has the necessary information at his immediate command and so does not require the aid of charts or other guides. Third, there is always the possibility of the physician being misled because of the inability of such a system to stress or emphasize properly the relative importance of symptoms. On the other hand, the work would be of very definite value for the man doing only a limited amount of work in these specialties.

#### CLINICAL MANAGEMENT OF SYPHILIS

By Alvin Russell Harnes, M.D., chief of Congenital Luetic Clinic, New York Hospital. The Macmillan Company, New York, 1935. Price, \$1.50.

The author stresses the necessity of long and adequate treatment for the various stages of syphilis. This is in keeping with the modern concept.

The reviewer is not in accord with the description of some of the lesions such as, "The primary lesion of syphilis in some instances gives the general appearance of a mild urticaria, from which the surface epithelium has been removed," and "many patients in all stages of syphilis complain of stomach trouble." The author advises an afternoon nap for an hour or two, after the noon luncheon, and advises luetic patients to avoid the direct rays of the sun. He recommends the use of neosalvarsan, intramuscularly. The reviewer tried it once, some years ago with very unfavorable results. The author believes that optic neuritis after tryparsamide is only temporary, and that normal vision will practically always return, after the discontinuance of the drug. He is not in accord with fever therapy and suggests that many patients come to necropsy with a negative pathologic report as to cause of death.

The outstanding feature of the volume is the treatment charts which give a clear conception of his treatment, but his use of both bismuth and mercury during the same course of treatment is contrary to the usual custom.

A recent review in the *Journal of the American Medical Association* states, "It is seldom that one will find in a small volume as many misstatements, inaccurate deductions, unscientific and vague clinical impressions, and therapeutic misinformation, as are found in this volume in the clinical management of syphilis. In view of these grave defects and omis-

sions, and the obvious fact that the author is not an experienced syphilologist, this book cannot be recommended as a reliable guide in the treatment of such a serious disease as syphilis."

#### ELECTROTHERAPY AND LIGHT THERAPY

By Richard Kovacs, M.D., clinical professor and director of physical therapy, Poly-clinic Medical School and Hospital, New York. Second edition, enlarged and thoroughly revised. Octavo of 696 pages, illustrated with 263 engravings. Lea & Febiger, Philadelphia, 1935. Price, \$7.50.

This book, in the reviewer's opinion, is the best to be published so far. The author is indeed a thorough student of the subject. The chapter on electrophysics is especially well prepared. He presents all the modern methods of technic accurately, and emphasizes those which in his opinion have given the best results.

The volume includes all of the accepted methods applicable to general medical conditions as well as the specialties. The illustrations are unusually well selected. This book can be recommended to all who are interested in the field of therapy. It is indeed, an outstanding contribution to the subject of physical therapy.

A. G. F.

#### EMOTIONS AND BODILY CHANGES

By H. Flanders Dunbar, M.D., Ph.D., departments of medicine and psychiatry, Columbia University. Columbia University Press, New York, 1935. Price, \$5.00.

Since the advent of medical practice physicians have consciously or unconsciously employed the methods of the psychologist in the study and treatment of human ills. Unfortunately for medical science the problems of the psychosomatic inter-relationship have not been sufficiently clarified to permit their full appreciation. Even today it is difficult to find a clear and adequate discussion of these matters.

With these thoughts in mind the author of this volume has attempted to review and report, in a critical manner, the advances and contributions which have been made to this study throughout the world. While essentially a survey of this literature, the text elaborates in many instances upon the work of other investigators and attempts to direct the thought of the reader along productive lines of investigation. Every student of medicine must be interested in this problem. The body cannot be cured without the mind. The successful practitioner realizes this truth and will welcome an opportunity to further his knowledge in this field.

The clinical application of the principles of psychology discussed is adequately presented in the second part of the volume. A bibliography of 2,251 references is given.

To the serious student this volume is addressed, and we believe it will fill his every need.

### THE AMERICAN ILLUSTRATED MEDICAL DICTIONARY

By W. A. Newman Dorland, M.D. Seventeenth edition, revised and enlarged. Octavo of 1,573 pages, with 945 illustrations. W. B. Saunders Company, Philadelphia and London, 1935. Price, \$7.50.

Since the first edition of this valuable work appeared in 1900 it has been accepted as the standard for medical spelling and pronunciation by most medical publications. During the thirty-five years of its existence it has undergone seventeen revisions so that at all times it has been brought entirely up to date. This seventeenth edition contains 1,573 pages with 945 illustrations. The corps of collaborators has spent three years in preparing this revision and every page has been scrutinized so that the present edition would be entirely comprehensive and free from typographic errors.

The dictionary maintains its handy size, and the addition of thumb tabs materially aids in its usefulness. The dictionary bears our unreserved recommendation, and is accepted as standard, both by THE JOURNAL of the Iowa State Medical Society and *The Journal of the American Medical Association*.

### DR. COLWELL'S DAILY LOG FOR PHYSICIANS

A brief, simple, accurate, financial record for the physician's desk. Colwell Publishing Company, Champaign, Illinois, 1935.

As an old friend in new dress, Dr. Colwell's Daily Log for Physicians is again presented to the medical profession in a more attractive cover and with certain minor revisions which the publishers of this work feel make the operation of the record system more complete.

The record book is approximately nine by ten inches over all, with an actual record sheet of approximately seven by nine inches. A separate record sheet is provided for each day of the year with spaces for appointments, dates, hours, names of patients, columns for a record of the services rendered and the financial accounting of that patient. A page for a business summary is inserted at the end of each month where all financial transactions for each day of the month may be tabulated. Other sheets are provided for expenses for the month, a special surgical record, narcotics dispensed, and finally a summary of the entire month's business. From these monthly summaries an annual statement may be made in the closing sheets of the record, which should make the accounting for the year's business a very simple matter.

The book has two very definite features which commend it to the use of any physician; first, its convenience; and second, its simplicity. These features will be appreciated whether the physician employs a secretary or whether he performs his own bookkeeping. This physician's log is certainly one of the most efficient records of this nature which has come to our attention.

### MODERN MOTHERHOOD

By Claude Edwin Heaton, M.D., assistant clinical professor of obstetrics and gynecology, New York University, University and Bellevue Hospital Medical College, New York City. Farrar & Rinehart, Inc., New York, 1935. Price, \$2.00.

This volume presents a very modern discussion of a world-old problem. It is a practical treatise of the entire subject of complete maternity care—from modern biologic tests for pregnancy, to sterility and child-spacing and the problem of obtaining adequate maternity care.

Written in a practical, informal, doctor-to-patient manner, it deals adequately with the various problems of motherhood, discussing scientifically yet practically such subjects as diet, exercise, symptoms of pregnancy, complications of pregnancy, mental attitudes, the layette and other matters of fundamental importance to the expectant mother. One of the most interesting features of the book for the woman approaching motherhood is an outline of the physiologic development of the fetus from month to month as well as her own development during the period of pregnancy.

The book is intended to supplement and not to replace the advice and work of the doctor and may well be recommended by any obstetrician to his patients.

### LIVING ALONG WITH HEART DISEASE

By Louis Levin, M.D., cardiologist to the St. Francis Hospital. The Macmillan Company, New York, 1935. Price, \$1.50.

The author of this small volume believes that the recognition and treatment of heart disease may be furthered by the education of the public optimistically along the lines of modern cardiotherapy, feeling that the average layman today looks upon heart disease as a most fearful and fatal condition. The author has prepared this volume, employing simple language, to describe the various forms of functional and organic heart disease, indicating wherever possible the optimistic outlook for the condition, but never permitting the reader to assume that because of this optimism the condition is one to be ignored or neglected. He stresses repeatedly the need for the careful attention of a competent physician and urges close adherence to this sufficient advice.

Following a general definition of heart disease, he discusses the various types of organic heart disease ordinarily described as "leaky" valves. In later chapters he discusses myocarditis, hypertension, and the several forms of heart pains. His chapter on the treatment of heart disease stresses moderation. "Everything was curtailed a bit, but nothing was prohibited." His closing chapters deal with a philosophy of optimism in heart disease and a discussion of "Your Physician." The volume appears entirely well written for the purpose intended.



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### THE RÔLE OF PSYCHOTHERAPY IN GENERAL MEDICINE\*

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Any attempt to change the mental attitude of an individual and thereby help him to overcome functional symptoms can be called psychotherapy. Scientific psychotherapy may be considered the attempt to find the psychic origin of functional symptoms and either to remove their causes or enable the patient to overcome or tolerate his symptoms. The treatment consists in re-education of the patient's harmful emotional attitudes, the development of insight and new understanding of mental causes of his maladjustment, and at times, by deliberate suggestion or persuasion, to help him regain self-confidence and better emotional control.

It is time that the mass of the medical profession should become informed of the need for psychotherapy, and by the scientific application of known psychotherapeutic principles beat the cultists at their own game; to say nothing of diverting to the medical profession hundreds of millions of dollars spent every year for quackery. The only secret of success in non-scientific cults is the factor of suggestive therapeutics in their methods. We physicians have been too organically minded and our cynicism about emotional symptoms and their etiology has hindered medical progress. Although long shunned by the medical profession, the technic of psychotherapy is essential not only to the treatment of mental disorders but to all branches of medicine. Numerous medical colleges, awakening to the necessity of placing more emphasis upon psychiatric teaching, are offering courses in psychotherapeutics to senior classes. At the University of Nebraska, College of Medicine, I give to senior students a course in psychotherapy followed by the student's practical study of patients in a psychotherapeutic clinic. Graduates of these colleges are going out to apply their

knowledge scientifically, thus offering the hope that medicine of the future will give more adequate treatment to functional nervous disorders.

My purpose in this paper is to give you known scientific facts devoid of humbug concerning psychotherapy. In all classes of patients who consult physicians, the percentage of those not suffering from organic physical disease but from functional nervous disorders is variously estimated to be from 50 to 75 per cent. Functional nervous disorders, partly or wholly disabling individuals from purely emotional causes, are therefore society's most common illnesses. In analyzing the histories of psychoneurotic individuals I have found that the majority have received illogical, unnecessary examinations and treatments which have frequently further discouraged the patient and increased his neuroticism. About 20 per cent of my patients have been subjected to needless surgical procedures, such as appendectomies, oophorectomies, exploratory laparotomies, tonsillectomies, thyroidectomies, opening sinuses, etc. These procedures have often been recommended for cure of functional symptomatology caused by emotional states, and though many of them seemed to help for a time, sooner or later the symptoms recurred because the patient himself had not readjusted his mental attitude to his problems. True, the application of all therapeutics has a psychologic aspect or value, and it is very difficult to estimate therapeutic results separately from suggestive psychologic influences. If one can obtain results from ill applied, unscientific suggestive measures, such as vertebral adjustment, diet and drug therapy, or what not, how much greater would be the results from purposeful scientific methods directed toward fundamental causes!

Modern psychotherapy began about 1765 with Franz Anton Mesmer, a highly intelligent and successful Viennese physician, who gained partial medical recognition only at the end of his life. The Frenchman, Charcot, one hundred years later forced official recognition and acceptance of hypnotic therapy. In this country Mary Baker

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Eddy in the latter part of the nineteenth century developed an important psychotherapeutic school, taking from her healer, the watchmaker Quimby, his doctrine of mind cure and embellishing it with religious beliefs. The modern period may be called the Freudian era. Freud, a Viennese physician, elaborated the work of Janet, a French physician who was the first to show the influence of unpleasant memory experiences upon causation of hysterical symptoms. In addition Freud developed the theory of the unconscious painful memories largely centered around the sexual life of the individual. He evolved the method of mental catharsis, ventilation and revival of unpleasant memories, relieving through abreaction or the release of pent up affects and thus overcoming emotional conflicts. A detailed study of the unconscious mental life according to Freud's theories is called psychoanalysis. Since Freud, many followers, Adler, Jung, Ferenczi, Jones, Brill, and others have added much to our knowledge of the causation and cure of psychoneuroses.

#### THE MODERN CONCEPT OF ETIOLOGY AND PSYCHOPATHOLOGY OF THE NEUROSES

Although many of Freud's theories are in dispute, yet through their use medical psychologists have gained a much better understanding of the psychoneurotic individual. The theory of sex as a sole etiologic factor is gradually being modified. Sex experiences in childhood are nevertheless more common than ordinarily supposed. The normal individual goes through these experiences without ill effects. The sensitive, introverted one reacts with dread and shame, the result of civilized man's attitude of sex taboo. Two opposing sets of feelings develop with respect to the primitive instinctual desires on one hand, and social, idealistic concepts on the other. The result is conflict and repression with an ultimate compromise in the form of a neurotic symptom. In such situations of unsatisfied love life as coitus interruptus, masturbation, frustrated sex excitement, partial frigidity, or impotency, the deviation of the somatic sex tension from psychic into psychologic and physiologic tension states motivated by fear, occurs in a very sensitive personality type. The emotional frustration produced is the last straw in a weakened neurotic constitution, and the neurosis is the total personality reaction to an intolerable situation. In other words, all neuroses are over-reactions in suggestible, sensitive types; faulty responses to difficulties or problems not met frankly by the individual. A running away from the hard realities of life or escape mechanism produces a neurosis to compensate or protect the individual. In the actual neurosis the emotional stim-

ulation of fear, depression, etc., reacting through the sympathetic and parasympathetic systems, produces physiologic changes in the function of the cardiovascular, digestive, and other systems. These visceral sensations produce the symptoms so commonly considered organic and account for the large number of cases mistakenly diagnosed as gastric, cardiac, or genito-urinary. The psychoneurosis is then maladaptation to the environment not caused by infection, bowel toxemia, gynecologic pathology or any physical condition. In these cases only the most careful investigation of all the constitutional, physical, psychogenic and social factors can determine the etiology of the individual case.

#### CLASSIFICATION OF THE NEUROSES

Psychoneuroses can be most simply classified into the following groups:

1. Hysterical reactions.
2. Anxiety states.
3. Neurasthenic reactions.
4. Obsessive compulsive states.

1. The hysterical reaction occurs in an individual of undue suggestibility who reacts to his emotional problems by repression, denial of reality, and conversion into mental, motor, sensory or visceral symptoms. By these means he effects an escape from his intolerable emotional situation.

2. Anxiety states (Freud's disease) is now separated from the hysterical group, and includes the largest number of psychoneurotic patients. Here morbid fear motivates the conduct: the anxiety or apprehensive dread produces physical symptoms from physiologic reaction of fear through the vegetative nervous system. At times anxiety, panics with predominating fear of death or other impending disaster, may properly be called anxiety hysteria. This disorder best exemplifies the production of the physiologic tension state of fear by frustration of emotional outlet, usually sexual.

3. Neurasthenic reactions, once including almost all neuroses, are considered under modern nosology a rare classification, which should be limited to irritable exhaustive states with hypotensive phenomena. Whenever an affect of depression predominates and motivates conduct, the reactions are more like a true psychosis of depressive type. More often we see neurasthenoid states secondary to focal infection or systemic disease, but these are not true neuroses.

4. The obsessive compulsive states are also rare types with profound personality alterations in which the person reacts to phobias by yielding to distressing, compelling tendencies to think and act against his will. Such an individual fears disease and contamination, is guilt conscious, and sets up



defensive symbolic rituals to escape from his unconscious conflicts.

#### METHOD OF EXAMINATION AND PSYCHOLOGIC APPROACH TO THE PATIENT

Psychotherapy begins with the first contact with the patient. Establishment of emotional rapport, usually obtained by the physician's warm personal interest in the patient, is the first and fundamental objective. Definite therapy begins with the first contact and the proper approach often determines the outcome. Care in the taking of the history, is necessary in order to convince the patient of the physician's thoroughness. It is a mistake to display a critical attitude, to suggest that the patient's symptoms are imaginative, or to tell him nothing is wrong, to go home and forget it. One has to be a good listener, and encourage the patient to talk out everything. After the complete physical study to exclude organic disease, the method of examination consists in getting as detailed a chronologic record as possible of the patient's previous life: the study of his entire background, stressing the psychopathology of factors in his previous life leading up to the current conflicts.

All the information obtained now gives leads to etiology and treatment, the constant question in the physician's mind being, "What is the genesis?" The relative weight of the psychogenic, somatic, social, and environmental situational factors must be analyzed; an invaluable and necessary aid to the therapist is collateral reading along mental hygiene lines, because the physician must be able to understand mental mechanisms before he can expect the patient to grasp them. If the problem is psychogenic one must determine the best method of psychotherapy; whether simple suggestive therapy, superficial re-educative therapy or detailed psychoanalysis is indicated.

#### RE-EDUCATIVE THERAPY

For the majority of mildly neurotic individuals of average intelligence, in whom the disorder has not formed deeply rooted pathologic trends or marked personality changes, re-educative therapy is the best method. This is usually brought about by Freudian principles of complete free association, aeration, ventilation, and mental catharsis. Eventually the goal is to get the patient to stand upon his own judgments, and is reached through so-called transference, a mutual understanding relationship, sometimes reinforced by persuasion or suggestion. The next step is desensitization, wherein, after confidence has been gained from his new understanding of the mental genesis of symptoms, the patient is required to face frankly the traumatic and unpleasant experiences of his

past and present. By intimate personal discussion of the conflict material as elicited, the patient is required repeatedly to face the situation or to make continued adjustments until the symptoms in that situation no longer occur or can be tolerated or ignored if they do occur. In this procedure the transference of confidence in the therapist must be complete. Encouragement, patience with setbacks, and positive reassurance are essential. Gradually one will be rewarded by a rebirth of emotional control and an everlastingly grateful patient.

#### SUGGESTIVE AND PERSUASIVE THERAPY

With suggestive therapeutics one must first develop in the patient the belief that he can get well, since he is cured on the day he believes himself cured. In suggestive therapy devious methods are often used, depending on the susceptibility of the patient, as shown by the success of charlatanism, strong medications, religious faiths, chiropractic, etc. The therapist had best stick to scientific suggestive measures; if he uses deceptive means, such as placebos, he should, with patients of normal intelligence, reveal the deception as soon as possible, in order not to risk destroying the patient's confidence. After one is certain of the patient's power to get well, he should reiterate the positive statement, pointing out all improvements, however slight. Asking the patient to measure his own improvement is an indirect suggestion. At times patients benefit from reading such books as "Outwitting Our Nerves," "Re-educating Ourselves," and certain books on sex when indicated. The therapist must avoid setting time limits for recovery, and must teach the patient endurance and tolerance, practicing the same perseverance himself, and never displaying by word or deed any lack of confidence in the patient's ultimate recovery. Some patients may need a temporary change of environment, hospitalization or even psychiatric treatment if they are unable to cooperate because of harmful counter influences from family or friends. Relatives often have to be taught insight into the patient's neurotic mechanisms. By suggestion the patient is also taught sensible ideas about digestive functions, constipation, anorexia, cardiac action, etc. He is taught to ignore or overcome many distressing sensations. He must learn to use whatever normal recreation and social assets he may have; at times the therapist must supply him with new ones. All these measures may or may not be reinforced by drug therapy. Some patients are helped by sedative drugs but such palliatives should be dropped gradually and the importance of self-control and independence should be stressed. With certain re-

sistant symptoms, hypnotic therapy is valuable in overcoming such neurotic symptoms as insomnia, aphonia, amnesias, impotency, and vaginismus or in probing for unconscious material in analyses; but it is of temporary value only. The lasting cure must be considered to be a change in the total personality reaction of the individual to his neurosis, with the development of a new objective stronger than the old neurotic desire to yield to inferiorities.

In certain cases where ordinary superficial psychotherapy fails, psychoanalysis is successful. Because, however, psychoanalysis deals only with unconscious material, requiring almost daily visits to the analyst for a year or more, and is adapted only to the more highly intellectual neurotic, its use is greatly limited. Two New York internists have recently shown after twelve years' experience, that psychoanalysis is superior to other psychotherapy in only a very small group of patients.

#### CONCLUSION

I have emphasized the importance to physicians of using scientific methods in mental healing. Medical science must make more attempts to understand the maladjusted personality and guide him back to normal emotional stability. Often a mental breakdown in the physician's own life is needed to show him the mental torture suffered by the psychoneurotic individual in his effort to find relief.

The profession should develop more tolerance for the neurotic patient and overcome our ignorance of mental problems, in order to bring back to medicine greater respect by adequately managing this ever increasing army of social misfits.

#### THE HEART AND ATHLETICS\*

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The development of athletics in our schools is peculiarly an American phenomenon. Nothing is found like it elsewhere in the world. Much comment has been given to this phase of American life by foreign visitors and critics. They remark on the intensity of the athletic activity; the elaborate sport program; the development of skill; the importance attached to it in undergraduate life; the large sums of money invested in buildings and equipment, and the enthusiastic public who follows college athletics. All of these facts only add interest to the much more important question with which we are here concerned, the effect of athletics upon the men engaging in them, and particularly the effect on the heart and life expectancy.

\* Presented before the Eighty-fourth Annual Session, Iowa State Medical Society, Davenport, May 8, 9, 10, 1935.

There is, perhaps, no subject in medicine upon which there is such a great diversity of opinion, even today. Early research workers were dominated by the thought that exercise produced a tremendous bodily exertion and therefore called forth consequences to the heart such as it did to the muscles. Records of the harmfulness of exercise upon the heart date back to the seventeenth century. In Germany, Hope, Corvisart and others, held it to be a proved fact that excessive exercise was able to produce heart disease. Later these opinions were amplified by Peacock, Allbutt and Meyers. In more recent times Seitz, Leydon, and Fraenzel, have described, in detail, heart disease resulting from overexertion. About this time Dietlen tried to prove an enlargement of the heart due to exercise. He found fifty-nine service men having healthy hearts with larger dimensions than his normal values. During the World War, Maase and Zondek saw enlargement of the heart in forty infantry men who for some consecutive weeks had taken long marches. On the contrary, soldiers who had never made such marches revealed normal heart sizes. The work of Kauffman was far more comprehensive and he concluded that enlargement of the heart can follow overexertion, but that the predisposition to enlargement is the result of previous infection, such as pneumonia, scarlet fever, or rheumatism. In 1909, Allbutt also made the statement that the influence of toxic and infective factors in enlarged hearts was hard to eliminate and concluded by saying, "The importance of muscular effort as a factor in cardiac injury has been much exaggerated." Duetsch and Kauf summarized the German research results by saying that, "When one looks over the results obtained there seems to be no doubt that athletic performances of every kind lead to enlargement of the heart. However, the findings up to the present time lose in meaning since all were made by percussion without x-ray control."

That the early writings just referred to, have gained a fast hold on the profession cannot be denied. The term, "athletic heart," came into being during this period, and still persists firmly in the minds of many physicians, athletes, and the laity. There is no proof that this condition ever did exist as a distinct entity. No pathologist has ever reported such a heart at autopsy. Most writers agree that the term should be dropped. Another footprint of the old school of thought, is the lack of uniformity among physicians in prescribing exercise both in our colleges and in private practice. The functional, apical, systolic murmur, with no sign of cardiac hypertrophy, still



keeps many individuals from active exercise and allows them to harbor a feeling of physical inferiority. Conclusions reached following examination by percussion and auscultation alone, always gave variable results, but with the introduction of the x-ray and electrocardiograph, a new concept of heart disease was established. McKenzie and Lewis were the first to emphasize that the rôle of the heart muscles assumes major importance with valve lesions and murmurs of secondary consideration. Therefore, to evaluate the effect of exertion upon the heart, it seems unnecessary to adopt a uniform criterion for diagnosis and classification. By this standard the proved facts must be sifted out of the great mass of data at hand and conclusions made thereon.

In this short study the attempt will be made to consider the problem in this manner and to show from authentic data both the immediate and remote effects of exertion upon the normal heart of young individuals. In considering the immediate after effects, the terms heart strain, heart rupture, acute cardiac dilatation and complete exhaustion will be discussed, while in studying the remote effects, attention will be directed to chronic enlargement of the heart, and whether it predisposes to early degenerative changes and premature death.

The heart of the normal athlete is an organ with a reserve far in excess of the systems it supplies. The degree to which it can meet the demands of exercise in well trained athletes is almost incredible. The man of average size has a pulse rate of 60 to 70 and an output of blood with each heart beat of from three to four ounces, giving a total flow of from six to seven quarts a minute. A. V. Hill of Cornell made a detailed study of one of his best athletes. He was found to have his best effort with a pulse rate of 180. From this it was conservatively calculated that his blood flow must have amounted to thirty-five quarts a minute. Remembering that the normal heart weight is about one pound, it is apparent how extremely efficient the mechanism must be, and what tremendous reserve power is possessed by the unimpaired heart. For the accomplishment of so much work the demands on the coronary circulation are enormous. Hill has calculated that the need of oxygen for the heart alone may exceed that of the whole body while at rest.

The term, "heart strain," must necessarily refer to either the muscle or valves of the heart. Such a condition has never been reported at postmortem examinations on the healthy heart. Lewis, concludes that the burdens imposed by physiologic acts upon the normal heart, however heavy these burdens may be, never injure the heart fibers, and

never exhaust the heart reserve. The normal heart cannot be strained because other bodily mechanisms give out first. Leaman states that, "severe, sudden exertion in the athlete will not produce 'strain' or muscle injury to the normal heart such as we see in skeletal muscles, nor will it damage or rupture the valves." Barth has collected twenty-four instances of spontaneous rupture of the heart and in every instance the seat of the lesion was in the left ventricle where the heart wall was the thickest. From these facts one feels safe in concluding that the rupture must have taken place through a degenerated area.

The most common diagnosis made on an athlete in complete exhaustion following a race is "acute cardiac dilatation." There are certain reasons for this widespread popular diagnosis. First, the old term, "athletic heart" is still prominent in the average physician's mind; second, the phenomenon of shortness of breath is one of the common symptoms of cardiac failure; third, usually, accurate methods of diagnosis have not been used. Interesting and accurate research work has been done on this point. In 1902, Kauffman was the first to prove by the x-ray that there is no rapid transitory enlargement of the normal heart following exertion. During the same year, Moritz, on the basis of x-ray examination came to the conclusion that the "healthy heart did not react to work with enlargement, but that the diseased heart did show some dilatation." The work of Richards and Gordon is likewise very convincing. By a series of heart x-rays taken on marathon runners immediately after competition, he proved that not only was there an absence of dilatation but in most instances the heart shadow was even smaller than before. Later, Gordon, was able to confirm these results in his experimental work on animals, proving that the heart shadow was smaller when the point of exhaustion was reached.

Knowing this, it seems logical to assume that there are other factors which are more directly concerned in the production of collapse: the psychic strain in some cases is tremendous; the toxins of infection may leave behind a loss of tone in the vasomotor system; severe hypoglycemia may produce this syndrome itself. All these must be evaluated before the heart can be blamed for the symptoms of dyspnea, rapid pulse and complete exhaustion. The heart cannot be exhausted because other bodily mechanisms have lower protective thresholds. For example skeletal muscles will cramp or cerebral anemia will set in and stop the athlete before the heart gives out.

A study of the remote effect of exercise upon the heart is even more interesting, for defective

hearts in later life are often pointed to, as being injured by overexertion during athletic training and competition. This challenge to athletics is deserving of consideration. First, does it result in a pathologic enlargement of the heart, and second, does it cause degenerative changes in the heart muscle with a lessened life expectancy?

Heart muscle develops with exercise but not in the same ratio as skeletal muscle. It is a physiologic process and falls far short of the enlargement commonly seen in disease. It is known that animals in the wild state have larger hearts in relation to their bodies than domesticated animals of the same type. It has been demonstrated that the hearts of racing grey hounds and race horses weigh more than the hearts of ordinary dogs and horses. Last year a study of the hearts of jinrikisha pullers showed that 45 per cent were somewhat enlarged, but the observers, Tung and Bein, concluded that this was not pathologic and in no way predisposed to disease.

Studies by Gordon, Richards and Leaman at the University of Pennsylvania show conclusively that there is no abnormal enlargement of the heart in healthy athletes, even when the period of training extends over many years. Leaman concluded by saying, "The only large hearts they have found in athletes have been those secondary to previous rheumatic infection or valvular lesions. Consequently, it seems very evident that participation in college athletics over long periods of time, does not predispose to cardiac enlargement, and to the disability which commonly comes to those with abnormal hearts.

The relationship between active participation in college athletics and the life expectancy of the individual, is perhaps of more interest to us than any other point in this study. As might be expected this question has its ardent advocates and critics. Proponents of athletics often recall that certain whole teams of one sport or another survive to a ripe old age. There are undoubtedly many instances of this sort on record. On the other hand critics of college athletics point out the names of many athletes who have died at a time when they should have been at the height of their vigor and usefulness. Both of these views are merely speculative opinions arrived at without any study of the mortality of athletes.

There have been a few sporadic attempts at the solution of this problem. Morgan made an analysis of the first twenty-four Oxford and Cambridge boat races, from 1829 to 1869, inclusive. Information which he obtained showed that there is very little difference in the mortality from heart disease among these men and other men of cor-

responding ages. Meylan completed a study of Harvard oarsmen who rowed from 1852 to 1892. He found that the first crew, in 1852, showed an increase of 1.6 years a man as compared with selected lives of insurance tables. Anderson found that graduates of Yale, who had won their "Y" on the athletic teams, showed a mortality of considerably less than that of the general graduating class. In a more recent study by Greenway and Hiscock of Yale letter men who graduated before 1905, they affirmed the previous findings with regard to the favorable mortality rate as compared with insured lives, but on comparison with the classmates who were non-letter men the mortality was 10 per cent higher. This prompted a more complete study of the problem on a wider scale. It was conducted by Louis I. Dublin of the Metropolitan Life Insurance Company. He investigated the longevity of 5,000 athletes of our ten leading colleges, who had graduated before 1906. The vital problem in the study, of course, was the life expectancy of the individual after middle life. As a basis for comparison he used the American Men's Table of Mortality. This represented the experience of all our large life insurance companies from 1900 to 1915, inclusive, and was the most reliable experience on a large scale that was available for the purpose of comparison. Among the 5,000 athletic records there was a total of 1,202 deaths. If the death rate expected by the mortality table had occurred, there would have been 1,314 deaths. Thus by this standard, the athletes have done better than insured lives by 8.5 per cent.

By dividing the men into four groups according to the year of their graduation, it is interesting to note the change of mortality during each period. The analysis shows a favorable and improving condition among these men with the advance of time. The ratio of actual to expected death was practically stationary during the first three periods but they declined sharply for the classes graduating after the year 1900. It is, of course, true that a great improvement occurred during these years in the mortality of the general population. The public health began to show the effect of the campaign which had been waged against typhoid fever and tuberculosis. At the same time, in college athletics there was a marked improvement in the management and supervision which the men received, both in their selection and method of training. It is interesting also to study the cause of death in this group of athletes. Trustworthy facts were obtained in only about half of the 1,202 deaths but it is reasonable to suppose that this is fairly representative of the entire group. Among the



younger men tuberculosis, pneumonia and typhoid fever were the most common causes of death. There was also a high incidence of death from accidental causes. Among the older men it is quite different. Over the age of forty-five, 32 per cent died of heart disease. This point is at variance with selected insured lives, where we seldom find more than 20 per cent of the deaths at a similar age, resulting from heart disease. The other important causes of death reported of the older ages are diseases of the nervous system, Bright's disease, pneumonia and accidents.

Taken as a whole, a study of this group of athletes presented a favorable mortality picture and this mortality rate has improved among recent graduates, the period in which there has been intensive selection and careful supervision of the athlete. During the early periods, without a doubt, looseness of selection and supervision, played a prominent part in the high incidence of the heart disease found in the older ages. Accurate means of diagnosis was not available at that time to weed out slight defects in heart muscle. There is another fact which must be born in mind when we assume that the athletic type of build and longevity go hand in hand. Insurance facts tend to point the other way. Men of large frame, and especially those inclined to become overweight, give higher mortality rates. Therefore, the man who is selected for athletic activities may after all not be cut for extremely favorable longevity. Those who arrive at a ripe old age are often small and physically underdeveloped people. Women live longer than men.

#### SUMMARY

Opinions, regarding the effect of exertion upon the normal heart, have changed with the introduction of more accurate methods of diagnosis.

Reliable research work on normal hearts, has proved that "heart strain" is not possible; that acute cardiac dilatation does not follow exertion; that it does not become enlarged abnormally after long continued exercise, and athletes do not develop early cardiac disability and die because of the exercise they indulged in while in school.

The phenomenon of American athletics should be paralleled by more detailed examination both as to selection and supervision while training. There is reason to believe that this is not being done in many high schools and colleges today.

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#### Discussion

Dr. J. S. Coontz, Garden Grove: This is a very interesting subject that Dr. Grossman has brought us today, and he has presented it to us so fully and clearly that I hesitate to attempt to discuss it for fear of detracting attention from his presentation.

I fully agree with him that "the heart of the normal athlete is an organ with a reserve far in excess of the organs and systems it supplies." For example, skeletal muscle cramp or cerebral anemia will set in and stop the athlete before the heart gives out.

He mentioned one point which I wish to emphasize. It is, to me, the practical lesson to be learned from his discussion. That is, beginning in high school, when the boy or girl enters athletics, he or she should have a carefully taken past medical and family history, and a complete physical examination. In the past medical history, particular attention should be given to tonsillitis, chorea, rheumatism, influenza, and the acute infectious diseases; particularly if there have been any complications or sequelae, and if recovery was not prompt and complete. Nephritis is a sequela to tonsillitis and other infectious diseases much more often than is generally recognized. The mild epidemic and contagious diseases of childhood are frequently followed with sequelae all out of proportion to the original disease. Those playing in competitive games should have a regular checkup by their medical supervisor and especially so following influenza, acute colds, tonsillitis or any infectious disease.

Participation in athletics does not predispose to cardiac disease, but an individual who has any impairment of his heart should be studied from the standpoint of the functional capacity of his cardiac muscle, and exercises prescribed that will improve the condition of the heart.

Dr. J. F. Edwards, Ames: At Ames we have been very much interested in physical examination of students. They are all examined on entering and then subsequently each year. The students who participate in athletics are given a special examination. During the last few years we have found some students among the group selected by the coaches for competitive athletics, who have heart murmurs, which probably have been diagnosed as heart disease.

It is pretty hard to exclude a man from athletics—a good athlete, who may have a cardiac murmur previously diagnosed as heart disease. The last two

years we have been using the physiologic test, or the test devised by Dr. Tuttle, I believe, of the University Physiological Department. As a consequence, we have permitted some men, with previous diagnoses of heart trouble, and murmurs, to continue athletic training without apparent harm. We watch them pretty carefully; we frequently check up their hearts, including x-rays; but, as the last speaker has said, we are very anxious to get some more definite test of cardiac deficiency. I do not know of any that is entirely satisfactory. The Crampton test was devised a number of years ago. Now there is this Tuttle test. I do not know of any more definite test that we can use than this. Where we have control of them as at Iowa State College—we can watch them carefully and see that no harm is done. For the last few years we have been x-raying those in whom we doubt the findings, to see whether there has been any change.

Dr. Grossman spoke rather doubtfully about whether there was such a thing as an athlete's heart being enlarged. We have had some cases in which we have been able to x-ray students as freshmen and then about the time of graduation, and some of them who entered competition involving a great deal of strain, milers and two-milers, which brings a tremendous strain on the heart, usually showed some enlargement of the heart. I think there has to be some enlargement if they progressively train and improve each year, because it takes an enormous capacity to run two miles against the present day competition, and their heart has to enlarge, I think, in order to stand that strain well.

**Chairman Parsons:** Doctor, due to my own ignorance, would you give us the basic principle of this physiologic test that you are using—the Tuttle test?

**Dr. Edwards:** It is a test in which an exercise, measured by a metronome is used. The patient steps onto a platform about the height of a chair. He steps up first with one foot; then he brings that foot down; then he steps up on the other foot, and then he brings that foot down. There are four movements performed. Before this is done the physician should very carefully estimate the pulse beats for two minutes, that is the number of pulse beats during two-minute intervals; and take the pulse rate several times in order to determine the normal rate. The pulse rate should then be calculated after the individual has gone through this exercise, and by a geometrical formula, a method of quadrangulation, one can obtain the mean which represents the cardiac deficiency.

**Chairman Parsons:** Based on the minute cardiac output?

**Dr. Edwards:** Yes, we found it works out pretty well. The students who show good reserve and no great change in the heart, are allowed to enter competitive athletics. I do not know of any better test. I do not know whether or not Dr. Tuttle has changed it within the last two years, but it comes nearer to being a good test for cardiac deficiency than anything

I know of. If there is anything else, I would be very glad to be informed.

**Dr. J. T. McClintock, Iowa City:** I want to explain a little bit further the test that was suggested here as Dr. Tuttle's test. It is a test which was devised by an Englishman some years ago. I presented it to the northern part of the state some eight or ten years ago I think. It is known as the pulse ratio test. It was devised originally as a test of general efficiency of the individual. After trying it out for general efficiency, we tried it at the university on all of the freshmen who were being examined. It was as a result of that work that the test was given out as a very good one for the determination of cardiac efficiency.

The pulse ratio is determined by dividing the total pulse for two minutes after a known amount of exercise by the pulse for one minute under resting conditions. In other words, if you take the same individual with a normal heart, the faster he steps up, the greater will be the ratio between the pulse before and after. We can then pick out a normal individual from all angles, that is from the physiologic test and from the physical examination and from his general physical ability and establish that individual as our normal. Then we calculate his ability to step up on a stool, say, thirty-five times per minute, and determine his ratio. We then determine the pulse ratio of the individual under examination for the same degree of exercise (thirty-five steps) and compare this ratio in terms of percentage with that of the individual whom we have taken for our standard. Thus we can rate them according to whether they are 50 per cent efficient, 20 per cent efficient, 75 per cent efficient, etc. For any who might be interested, we have the test worked out at the university. We probably have reprints which we would be very glad to send any of you in connection with that test. We find it is very efficient in the examinations made at the university.

**Dr. Grossman, closing:** In a discussion of this type it is well to emphasize again that we are dealing with normal hearts of youth. We all admit that defective hearts or those which have lost the resiliency of youth, may be damaged easily by feats of endurance. The heart in healthy athletes responds to continued exertion with a certain amount of physiologic enlargement. This is not pathologic and after a period of time the heart returns to its former size. Disease of the myocardium or valves, due to exertion has not been proved.

During the past, athletics has received general condemnation for its effect on the heart without due consideration to the systems which are in force in some of our high schools and colleges. Two things could be emphasized in this matter. First, the examinations of athletic aspirants are altogether too superficial, and second the care of the athlete's health during training is far from efficient. Personal knowledge of athletes being rushed into athletic competition immediately after a severe attack of influenza or sore throat, later to show kidney involvement, makes one feel that the issue is not the effect



of athletics upon the heart, but rather the effect of athletics upon the general health, due to loose selection and indifferent training.

### THE HEART IN BRONCHIAL ASTHMA\*

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The effect of bronchial asthma on the cardiovascular system has always been debatable. Much of the confusion has resulted from the use of the term "asthma" to denote any paroxysm of shortness of breath. Thus we find terms such as "cardiac asthma," "abdominal asthma," and "renal asthma," all denoting paroxysms of difficult breathing, yet all different etiologically. The term "bronchial asthma" has been defined by Coca<sup>1</sup> as that form of atopic illness which manifests itself in recurrent attacks of paroxysmal dyspnea, particularly pronounced in the expiratory phase. This definition will be adhered to in the following discussion.

The impression has generally prevailed that there is an hypertrophy and dilation of the right heart in bronchial asthma. The assumption is that as a result, first of increased pressure in the pulmonary circulation during a paroxysm of asthma, and second, injury to the pulmonary capillaries by the emphysema, the right heart will sooner or later manifest the usual signs of overactivity, namely, hypertrophy and dilation.

This assumption has been widespread among the members of the medical profession and has found its way into many textbooks. No proof, direct or indirect, has ever been brought forward to substantiate these ideas. In fact, it is well known that the heart in bronchial asthma is usually small. This seems logical when one reviews the physiology of the intrathoracic pressure in the normal individual and in a person during an asthmatic attack.

In 1908 Götzl and Kienböck<sup>2</sup> observed two cases of asthma radioscopically and noted that the hearts were small. Between the attacks they observed that if either of these patients took a deep breath and strained with his glottis closed (Valsalva's experiment) the hearts were seen actually to diminish in size, whereas the intrathoracic pressure was increased. This was confirmed later by Alexander, Luten and Kountz<sup>3</sup>, who found that the same thing occurred in healthy subjects. During normal inspiration, the negative pressure in the chest increases. This increase in negativity of intrathoracic pressure during inspiration is a factor which aids in filling the right heart. If for

any reason inspiration is not accompanied by this increase in negativity of intrathoracic pressure the right heart does not fill as well as it does normally. During a paroxysm of asthma, intrathoracic pressure does not decrease as it should with inspiration and so the right heart does not fill well. This naturally causes an increase in the venous pressure as is seen in the greatly swollen veins of the neck and also in the veins of the arms. The amount of blood flowing into the left ventricle decreases and naturally less blood reaches the systemic circulation. The peripheral effects therefore should be pallor, rapid small pulse, low arterial pressure and cyanosis, and these are common in bronchial asthma. The pressure gradient between extrathoracic veins and right auricle during a bronchospasm is less, causing a reduction in the amount of blood in the right ventricle and therefore a small, rather than dilated, right ventricle occurs. The decreased filling of the heart may account for rarity of deaths during attacks of bronchial asthma.

The cardiovascular system is further spared from damage by the low arterial pressure seen in this disease. Alexander, Luten and Kountz<sup>4</sup> reported a series of fifty cases of asthma, and normal or low blood pressures were found in all but three of them. The average was 118 M.M. Hg. systolic and 74 M.M. diastolic. The average age of this group was thirty-nine years. McLaughlin<sup>5</sup> reported the blood pressure in 881 so-called allergic patients. The average systolic pressure was 130 M.M. Hg. and diastolic was 82. Of this large group 103 had a hypertension with an average pressure of 178/105. This would lead one to suspect that hypertension was a common finding. However, McLaughlin makes the following statement in regard to this hypertensive group: "eighty-eight of these were studied in some detail. Seventy-two or nearly 90 per cent were diagnosed asthma chiefly on the physical signs in the chest; one case on the finding of eosinophiles in the sputum." Sihle<sup>6</sup> noted a fall in arterial pressure during a paroxysm. This has been confirmed by others, especially Alexander. The cause for this low arterial pressure during an attack may be the decreased blood volume in the systemic vessels as noted before.

Bronchial asthma is a fairly common disease. It would follow that if the cardiovascular system were damaged in this disease, we should see many cases of heart disease directly attributable to it. In the textbooks, asthma is never given as an etiologic factor. Further, we would expect many reports in the literature, either describing the heart lesions or the incidence of heart disease. In the varied statistical reports on cardiac disease one

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finds no mention of asthma. In 1933 Dr. Rathe and I<sup>7</sup> reviewed 1329 cases of cardiac disease occurring in a five-year period at the State University of Iowa hospital. Although this report included all types of cardiac disease, in no instance was asthma a precipitating factor. It may be argued that bronchial asthma is a rare condition at the State University of Iowa hospital, but during the last eighteen months there were 248 cases seen in the Allergy Clinic, or about as many asthmatic patients as there were cardiac patients.

In reviewing the literature, this scarcity of cardiac disease in bronchial asthma becomes more striking. In 1922 Huber and Koessler<sup>20</sup> reviewed the literature, attempting to find reports of deaths due to bronchial asthma. They state, "So far as we know, only fifteen cases are reported in which a more or less detailed microscopic study of the lungs has been made and of this number only about one-half seem, on close analysis of the data, to be cases of true bronchial asthma." To this series they add six patients. Up to the present time only fifty instances of bronchial asthma with autopsy findings have been reported in the literature. To this small number the following case will be added.

#### CASE REPORT

*History.* The patient was born in 1888 and was considered a perfectly healthy child. She had the usual diseases of childhood and also pneumonia. In 1925 she began having frequent upper respiratory infections; was told that she had nasal polyps which were removed. Since then she had four subsequent operations for nasal polyps. In 1928 she had her first attack of difficult breathing. At first the paroxysms of difficult breathing were precipitated by coughing. During these attacks she always had a great deal of wheezing, and a sense of constriction about the neck. Because some mucoid material was raised when she coughed, tuberculosis was suspected. Stereoscopic films of the chest did not reveal any pathology and repeated sputum examinations were negative for tubercle bacilli. These attacks of wheezing would occur at any time and no particular foods or epidermals would initiate or intensify the paroxysms. The spells soon recurred daily and it was necessary for her to give up all her work. Subcutaneous injections of adrenalin at first gave complete relief, but later it was necessary to give her morphia also. For several weeks before admission to hospital the asthmatic spells recurred both day and night.

The patient was married; one pregnancy and one miscarriage. Menopause started in 1931. Previous to that her menstrual cycles were normal. There was no family history of tuberculosis or cancer. The patient's father had had asthma for many years and her paternal grandmother also had asthma.

*Physical examination.* The patient was admitted to the University Hospital March 5, 1934, complain-

ing of weakness, loss of weight and asthma. She was a poorly nourished, small woman, forty-six years of age, short of breath and slightly cyanosed. The skull was not remarkable; growth of hair on the head, in the axillae and over pubes was normal; hearing and vision unimpaired; pupils reacted satisfactorily to light and accommodation, and the fundi were negative to ophthalmoscopic examination. All teeth had been removed. The tongue, pharynx and tonsils were not abnormal. A few lymph nodes were palpable in the cervical chain, but the enlargement was not significant. There was no increase in the anteroposterior diameter of the chest. The diaphragms were low and no excursion obtained. Expansion was practically nil. Examination of the lungs showed nothing except that the breath sounds were obscured by musical noises. The heart was of normal size; no murmurs were heard; the peripheral arterial pulse was small. There were no signs of disease of the aorta. The arterial blood pressure was 140/90 M.M. Hg. The abdomen was essentially normal. The extremities were normal. Vaginal examination revealed a lacerated cervix, a small cystocele and rectocele. No abnormal neurologic signs were discovered.

*Laboratory examination.* The initial blood cell counts showed 5,080,000 erythrocytes; and 7,700 leukocytes, of which 85 per cent were polymorphonuclear neutrophils, eleven per cent lymphocytes, and four per cent eosinophiles. The hemoglobin was 85 per cent (Sahli). The blood Wassermann reaction was negative. Repeated examinations of the sputum were negative for tubercle bacilli. Roentgenograms of the chest showed a rather marked degree of emphysema. All sensitization tests gave negative results. The pollens were tested by the scratch method, whereas all others were given intradermally.

*Subsequent course.* The patient had a stormy course throughout her hospital stay. Because of very frequent asthmatic attacks which were not relieved by stramonium mixtures or ephedrine, she was placed on nothing but orange juice by mouth. Adrenalin was given when the paroxysms became alarming. Typhoid vaccine was given intravenously with little relief. The attacks finally became constant and the patient was given hydrochloric acid (1-1000) intravenously with little relief. This was repeated again and she seemed to make some improvement. On the thirty-fifth hospital day she developed a rather severe paroxysm of shortness of breath. Adrenalin was given twice within a period of twenty minutes, but despite this and caffein and artificial respiration, she died a typical respiratory death.

*Necropsy protocol (excerpts).* The skin was pale, the nasal passages clear. Many needle puncture marks were present in the skin of the arms and thighs. There were thin filmy adhesions between the visceral and parietal pleura over the right upper and middle lobes, particularly at the apex posteriorly. No fluid was present in either pleural cavity. The right lung weighed 330 gm., the left 290 gm. They



were voluminous, pink and crepitant throughout. Interlobar adhesions were noted on the right. The bronchioles were not remarkable. No evidence of infarction or thrombosis was present. Histologic examination showed the alveoli widely distended throughout. The walls seemed quite thin. The small vessels were moderately distended with red blood cells. There was evidence of an inflammatory reaction about the bronchioles and here a few lymphocytes and eosinophiles were seen. The smooth muscle about the bronchioles was increased. The mucosa of the bronchi and bronchioles was definitely redundant, thrown into folds, and a layer of tissue immediately underlying it was hyalinized. No thymic tissue was found. The heart weighed 290 gm. The heart and aorta showed no noteworthy changes. Histologically no appreciable thickening of the intima of the coronary vessels was noted. The spleen weighed 100 gm. The capsule was wrinkled and the organ was soft. The malpighian corpuscles were visible. The gastro-intestinal tract was essentially normal. The kidneys, adrenal glands, ureters and bladder were normal. The internal genitalia were not remarkable except for the presence of a small mural leiomyomata of the uterus. The brain was essentially normal.

*Comment.* At necropsy the cardiovascular system was essentially normal. Macroscopically the lungs showed evidence of pulmonary emphysema. The diagnosis of bronchial asthma was substantiated by microscopic evidence of a redundant bronchial mucosa, marked hyalinization of the basement membrane, eosinophiles scattered about the bronchioles, and smooth muscle hypertrophy of the bronchiolar walls.

All of the fifty cases occurring in the literature have been reported as bronchial asthma (See Table I). Since this review is not one of bronchial asthma but of the cardiovascular system, no attempt is being made to question the original diagnosis. All the authors who have reviewed these histories agree that many of them are not true bronchial asthma. It was very difficult to evaluate the data given, since most of the reports gave detailed accounts of the lungs and barely mentioned the heart or blood vessels. Of the fifty-one cases, including the case herewith reported, twenty-two had to be eliminated because the cardiovascular findings were complicated by arteriosclerosis, rheumatic endocarditis or congenital lesions. In one instance there was no macroscopic, only microscopic findings. Of the remaining twenty-eight patients, the heart was reported as normal in eighteen. In one individual<sup>15</sup> the right ventricle was dilated and in another<sup>34</sup> the right ventricle was hypertrophied. In the remaining eight patients the right ventricular hypertrophy or dilatation was questionable. In these eight the evidence either was too meager to permit any con-

clusions or was conflicting, e. g., a heart of normal size and weight with questionable hypertrophy of the right wall. A summary of the literature shows us that in only two instances has the right heart been definitely involved. Even if the eight questionable cases were included the total number still is small. These findings are in accord with those of Alexander<sup>4</sup>, and Michael and Rowe<sup>33</sup>.

To ascertain further the effect of bronchial asthma on the cardiovascular system the records of patients seen at the Allergy Clinic of the State University of Iowa Hospital were reviewed. Only patients who were examined in the Allergy Clinic and admitted to the Medical Service for complete examination were included in the series. Each case was definitely diagnosed bronchial asthma. In this series there were seventy-six patients, ranging in age from sixteen to sixty-nine years. Forty-five were males and thirty-one were females. Six were between the ages of ten and nineteen years, sixteen between twenty and twenty-nine, eighteen between thirty and thirty-nine, nineteen between forty and forty-nine, twelve between fifty and fifty-nine, and five between sixty and sixty-nine. The duration of the disease was over ten years in forty-five or 59 per cent of the cases. Only four of the group had a duration of one year or less. Clinically, the hearts were of normal size in seventy-five of the patients. Only one of these individuals had an enlarged heart. A seven foot film was taken in every case, confirming the clinical findings. The arterial blood pressure was below 150 M.M. Hg. systolic and 90 M.M. diastolic in seventy-three of the cases. In one instance it was 158/90, in another 160/75 and in the patient with the large heart 210/106. The ages of these three patients were fifty-one, fifty-seven, and sixty-seven years, respectively. The duration of the asthma was one and one-half years, twenty years and twenty-four years. In each of these three patients there was a marked retinal sclerosis. Emphysema was diagnosed in thirty-four of the seventy-six cases and in nearly all instances was confirmed roentgenologically. In five patients minimal or arrested tuberculosis was found. Electrocardiograms were taken in ten of the patients. The mechanism was normal in nine, the other had a rhythmic bigeminy. In one instance a left axis deviation was noted, but no right axis deviation was found. No changes in T-waves or Q-waves suggestive of coronary artery disease were encountered.

The only patient in the group whose heart was enlarged was a woman sixty-seven years of age. She had a history of asthma over a period of

TABLE I

Author	Date	Age	Sex	Duration	Condition of heart	Cause of death
1. v. Leyden <sup>8</sup> .....	1886	40	Female	From childhood	Cardiorenal failure Generalized edema	Died during attack
2. Berkart <sup>9</sup> .....	1889	37	Female	14 years	Dilated and hypertrophied	Died during attack
3. Schmidt <sup>10</sup> .....	1892	49	Female	2 to 3 weeks	Large heart. Carcinoma of lung	Died during attack
4. Fraenkel <sup>11</sup> .....	1898	63	Male	9 to 10 months	Right and left ventricle dilated	Died during attack
5. Fraenkel <sup>12</sup> .....	1900	48	Male	At least 20 mo.	Heart normal	Died during attack
6. Jezierski <sup>13</sup> .....	1906	46	Male	12 years	Heart normal	Died during attack
7. Jezierski <sup>13</sup> .....	1906	63	Female	4 years?	Heart normal	Pneumonia
8. Ellis <sup>14</sup> .....	1908	27	Male	1 year	Left ventricle hypertrophied	Died during attack
9. Mönckeberg <sup>15</sup> .....	1909	29	Male	3 years	Right heart dilated	Died during attack
10. Heizer <sup>34</sup> .....	1911	2	(?)	After ninth month of life	Right ventricle hypertrophied	Died during attack
11. Tikhmeneff <sup>16</sup> .....	1913	29	Female	From childhood	Heart enlarged	Duodenal hemorrhage
12. Marchand <sup>17</sup> .....	1916	43	Female	23 years	Heart weighed 260 gms. Right ventricle hypertrophied?	Died during attack
13. Marchand <sup>17</sup> .....	1916	45	Female	1 year	Heart normal	Died during attack
14. Marchand <sup>18</sup> .....	1918	48	Male	2 years	Right sided hypertrophy Right ventricle 5 mm. thick	Died during attack
15. Kamchorn and Ellis <sup>19</sup> .....	1921	52	Male	From childhood	Heart enlarged, all chambers	Heart failure
16. Huber and Koessler <sup>20</sup> .....	1922	55	Female	5 years	Not reported	Suicide by drowning
17. Huber and Koessler <sup>20</sup> .....	1922	55	Male	6 years	Heart normal, wt. 320 gms.	Died during attack
18. Huber and Koessler <sup>20</sup> .....	1922	18	Female	From childhood	Healed vegetation on mitral valve. Wt. 400 gms.	Pericarditis and peritonitis
19. Huber and Koessler <sup>20</sup> .....	1922	29	Male	19 years	Heart normal	Fatal anaphylaxis
20. Huber and Koessler <sup>20</sup> .....	1922	32	Male	From childhood	Heart weight 300 gms. Normal	Lung abscess, pneumonia
21. Huber and Koessler <sup>20</sup> .....	1922	15 mo.	Female	5 months	Congenital narrowing of aorta. Right ventricle hypertrophied	Died during attack
22. Faschingbauer <sup>21</sup> .....	1922	47	Male	2 years	Arteriosclerosis. Hypertrophy left ventricle. B. P. over 200	Cerebral hemorrhage
23. Lemierre et. al <sup>22</sup> .....	1923	58	Male	Few months	Heart normal	Died during attack
24. Rackemann <sup>23</sup> .....	1926	39	Female	25 years	Heart weighed 290 gms. Right ventricle dilated?	Died during attack
25. Dehner <sup>24</sup> .....	1927	51	Male	1 year	Mitral disease. Heart weighed 280 gms. Right ventricle hypertrophied	Died during attack
26. Dehner <sup>24</sup> .....	1927	25	Male	8 years	Heart weighed 300 gms. Right ventricle hypertrophied	Morphinism. Died during attack
27. Kountz and Alexander <sup>25</sup> .....	1928	52	Male	2 years	Right ventricle 4 to 5 mm. thick	Died during attack
28. Kountz and Alexander <sup>25</sup> .....	1928	60	Male	27 years	Coronary sclerosis	Died during attack
29. Kountz and Alexander <sup>25</sup> .....	1928	48	Male	Since childhood	Heart normal	Died during attack
30. Steinberg and Figley <sup>26</sup> .....	1928	60	Female	18 years	Both ventricles dilated, slight hypertrophy. Fibrosis of myocardium	Died during attack
31. Steinberg and Figley <sup>26</sup> .....	1928	61	Female	6 years	Heart weighed 275 gms. Normal	Died during attack
32. Bergstrand <sup>35</sup> .....	1928	31	Female	2 months	Heart weighed 380 gms. Slight myocardial fibrosis	Acute nephritis Bacteremia
33. Bergstrand <sup>35</sup> .....	1928	43	Female	Several years	Heart normal	Diffuse bronchitis Pulmonary hemorrhage
34. Harkavy <sup>27</sup> .....	1930	35	Female	9 years	Slight dilatation right ventricle? Heart weighed 525 gms. Severe arteriosclerosis of pul arteries and arterioles	Died during attack
35. Harkavy <sup>27</sup> .....	1930	23	Female	6 months	Right ventricle and auricle dilated.	Died during attack
36. Wright <sup>28</sup> .....	1930	67	Female	7 years	Heart normal	Died during attack
37. Clarke <sup>29</sup> .....	1930	53	Female	12 years	Heart weighed 240 gms. Normal	Died during attack
38. Fisher and Beck <sup>30</sup> .....	1931	32	Male	9 months	Heart weighed 330 gms. Normal	Died during attack
39. MacDonald <sup>31</sup> .....	1932	43	Male	5 years	Chronic rheumatic endocarditis, Mitral valve. Hypertrophy and dilatation right ven- tricle. Heart weighed 300 gms.	Died during attack
40. MacDonald <sup>31</sup> .....	1932	75	Male	8 years	Heart weighed 280 gms. Myocardial fibrosis and endo- cardial fibrosis and endo- cardial sclerosis. Right ven- tricle dilated. Syphilis of aorta	Died during attack
41. MacDonald <sup>31</sup> .....	1932	53	Male	Few months	Heart weighed 375 gms. Endo- cardial sclerosis. Arterio- sclerosis. Calcium at base of aortic cusps.	Died during attack
42. MacDonald <sup>31</sup> .....	1932	58	Male	2 years	Heart weighed 335 gms. Right ventricle thickened	Died during attack
43. MacDonald <sup>31</sup> .....	1932	36	Male	14 years	Heart weighed 280 gms. Slight hypertrophy of left ventricle	Died during attack
44. MacDonald <sup>31</sup> .....	1932	13	Female	From childhood	Terminal right ventricular dilatation	Died during attack
45. MacDonald <sup>31</sup> .....	1932	56	Male	3 years	Right ventricular hypertrophy Atrophy of heart muscle	20 hours after lipiodol injection
46. MacDonald <sup>31</sup> .....	1932	58	Female	45 years	Arteriosclerosis. Terminal right failure	Pneumonia
47. Murphy and Case <sup>32</sup> .....	1930	31	Female	1 year	Myocardial fibrosis. Right en- largement. Endocardial sclerosis	Pelvic neoplasm
48. Michael and Rowe <sup>33</sup> .....	1935	48	Female	14 years	Heart weighed 215 gms. Normal	Died during attack
49. Michael and Rowe <sup>33</sup> .....	1935	57	Female	4 years	Heart normal	Died during attack
50. Bubert and Warner <sup>36</sup> .....	1935	69	Female	2 years	Heart weighed 200 gms. Normal	Died during attack
51. Paul.....	1935	46	Female	6 years	Heart weighed 400 gms. Right ventricle 6 mm. Hypertro- phied?	Died during attack



twenty-four years. The cardiac enlargement was primarily of the left ventricle. The aorta was elongated and widened. The blood pressure was 210/106. Her retinal vessels revealed a marked sclerosis and there was tortuosity and thickening of the brachials and radials. Her vital capacity was 1700 c.c. which increased to 2100 c.c. after an injection of adrenalin. The electrocardiogram showed a normal mechanism, no axis deviation, no Q-wave or changes in the T-waves. A few premature beats from the left ventricle were noted. Clinically, the case was diagnosed as arteriosclerotic heart disease with hypertension.

None of the patients in this series died while in the hospital. One patient, a girl twenty-one years of age, died during an asthmatic attack a few days after leaving the hospital. One other woman, fifty-one, and a man forty-five, have since died during an attack. Since these deaths occurred at home, no postmortem examinations were done. The remainder of the patients are still living.

Kahn<sup>37</sup> studied the electrocardiographic changes in fifty cases of asthma. He found nineteen normal curves, ten right ventricular preponderances, twenty-one left ventricular preponderances and ten with inverted T-waves in lead III. He believes that a right axis deviation is evidence of a right ventricular hypertrophy. In many of his cases the diagnosis of bronchial asthma was questionable. Unger<sup>38</sup> reported an electrocardiographic study in seventy-four cases of proved bronchial asthma. He found twenty-three normal curves, four with right axis deviation, seven left axis deviation, fourteen with conduction disturbance and thirty-five with a low  $R_1$  and high  $R_3$ . This again would appear to indicate that right axis deviation is common. Both Kahn and Unger assumed, however, that right axis deviation means right ventricular hypertrophy. Unger also assumed that a low  $R_1$  and high  $R_3$  indicate a tendency toward right axis deviation and therefore right ventricular hypertrophy. Recent studies have shown that these ideas are not tenable. Fahr<sup>39</sup>, and Herrmann and Wilson<sup>40</sup> showed that the position of the heart in the chest is a determining factor in axis deviation. Barker, et al.,<sup>41</sup> presented evidence to show that in the human heart stimulation of the right ventricle resulted in premature beats formerly thought to originate from the left ventricle. In view of these recent advances in electrocardiography, the results of Kahn and Unger cannot be accepted. Criepe<sup>42</sup> also reviewed the data in fifty cases of true bronchial asthma. He found that during a paroxysm of asthma the electrocardiograph revealed a delay in

the auricular ventricular conduction. This is as expected since asphyxia usually gives such a conduction defect. In his series twenty-one curves were normal, twenty-one showed sinus arrhythmia, ten left axis deviation and four right axis deviation. Two of the patients in whom right axis deviation was found had definite mitral disease. He concluded from his studies that bronchial asthma has no permanent damaging effect on the cardiovascular system.

Dublin and Marks<sup>43</sup> reported in 1933 that deaths from heart disease are two and one-third times as common in bronchial asthma as in non-asthmatic patients. This statement was based on mortality statistics of 1,826 white applicants accepted for insurance during the years 1912 to 1928. In this group there were one hundred twenty-four deaths, ninety-nine of which were in males. Of the ninety-nine males, twenty-five died of heart disease, three of which were organic. Influenza and pneumonia caused twenty-three deaths, tuberculosis eleven, asthma nine and other respiratory diseases three. It appears that heart disease was a common cause of death in this insured group. However, the particular type of heart involvement most frequently certified was myocarditis. Clinically we know that myocarditis is a rare condition and seen infrequently at the autopsy table, but this diagnosis is used all too frequently to account for sudden unexplained deaths. That individuals with bronchial asthma have a high mortality is readily granted as can be seen in our own group of seventy-seven patients, four of whom died during an attack. It is also true that asthma is diagnosed frequently in patients with heart disease. Unfortunately this asthma is not true bronchial asthma but the so-called cardiac asthma or paroxysmal dyspnea, especially nocturnal dyspnea. Nocturnal dyspnea is a very common symptom in arteriosclerotic and syphilitic heart disease and is also encountered in mitral stenosis, although less frequently. This type of sudden shortness of breath is due to failure of the left ventricle and is inspiratory rather than expiratory. It cannot be stressed too often that nocturnal dyspnea is a symptom of heart disease and should not be considered as an atopic illness. Recently Drs. Smith, Rathe and myself<sup>44</sup> reviewed four hundred twenty cases of coronary artery disease. In this series nocturnal dyspnea was in many instances the first symptom and in a large majority was an outstanding manifestation as the disease progressed. If physicians would drop the term "cardiac asthma" and adhere to the use of "paroxysmal" or "nocturnal dyspnea" much of the confusion now existing would be eliminated.

## CONCLUSIONS

1. A review of the literature has revealed only fifty cases of asthma terminating fatally, in which necropsy observations are recorded. To this series the one case reported herewith is to be added.

2. From the cases reported in the literature, no evidence is obtained to show that asthma is primarily responsible for structural changes in the heart.

3. In seventy-six patients with bronchial asthma there was only one which presented cardiac hypertrophy. This patient had a hypertension and the clinical diagnosis was that of arteriosclerotic heart disease. Moreover there were no significant alterations in the electrocardiogram.

4. Although the mortality rate among individuals with bronchial asthma is higher than among others of the same age groups this cannot be attributed to cardiovascular disease. In individuals of the arteriosclerotic age it is sometimes important to differentiate paroxysmal dyspnea of cardiac origin from that of true bronchial asthma.

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## Discussion

Dr. John C. Parsons, Creston: Dr. Paul has told you that the heart cannot be said to be involved in many cases of bronchial asthma. That means that we must be especially alert in our diagnosis. Many times you will see a case which looks very much like bronchial asthma but it will turn out to be heart disease. You will have to remember that approximately one-third of all bronchial asthma occurs in the first decade of life, and one-half of the remaining cases will occur during the following three decades. Probably more cases of bronchial asthma occur in the first five years of life than in any other similar period of time in the remainder of life.

A case of asthma starting after the age of forty-five is a very rare occurrence and should make one especially alert to the possibility of a heart involvement rather than the presence of a bronchial asthma. Therefore, in diagnosis we must be exact, rather than just thinking of the possibility of bronchial asthma because of a sudden onset of dyspnea. These nocturnal dyspneas which Dr. Paul mentioned are very common propositions and, as he also mentioned, are many times the first symptoms of a beginning heart decompensation.

## HEART DISEASE IN PREGNANCY\*

ROY I. THEISEN, M.D., Dubuque

Organic heart disease is discovered by the obstetrician during his routine examination in about one per cent of the patients he sees for supervision during pregnancy. This complication, while it does not occur often, is treacherous and demands special care and watchfulness

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throughout the entire period of pregnancy, labor, and puerperium. The obstetrician alone, is not usually qualified to give to a woman all the care and advice she needs when her pregnancy is burdened by serious heart disease, and wise is he, who realizes the necessity of calling in an experienced internist to share the responsibility. This sharing of responsibility gives the patient the benefit of their combined knowledge, which in most cases will result in seeing the woman safely through a period of many possible pitfalls.

This idea of cooperation between the obstetrician and the internist must be emphasized, among our own groups so that the plan will be followed as a routine procedure. Certainly it is not advisable to call an internist at the last minute, when the patient presents a picture of marked cardiac failure, and is probably going to die. The internist can do very little at this time. He is needed early and his services should continue through the labor and the puerperium. The obstetrician should have no difficulty explaining to his patient the value and advisability of this cooperative plan. It is for her benefit, and she should be made to realize that her problem can best be handled in this manner. With this plan the obstetrician will hold himself responsible for the management of the pregnancy, and the internist shall have complete jurisdiction over the management of the damaged heart.

Those women who come to us for care during pregnancy fall in the age group from sixteen to forty-five years. During this particular period of life, the organic heart disease which is most likely to be encountered is the rheumatic type. It is estimated that about 90 per cent of serious heart disease in pregnancy is rheumatic in origin. Syphilis is the underlying factor in a small percentage of cases, and only occasionally can we say we are dealing with a case of congenital heart disease. It is necessary in order to outline a suitable regime for our cardiac patients in pregnancy, to be sure that they really have an organic heart condition, and not a cardiac neurosis with a neurocirculatory asthenia. The history of an attack of rheumatic fever, or a previous attack of cardiac failure is important. Other factors such as age, environment, and nervous makeup, help toward the correct determination.

In pregnancy we must remember that there are certain physiologic changes which occur normally. The diaphragm is displaced outward and upward, and we find the right border of the heart moved out to the right of the sternal margin. This is known as the "gestational heart." A rapid pulse is frequently encountered during pregnancy, and here I might say that it is no simple problem to

diagnose cardiac lesions in pregnancy. The enlarged breasts cause a definite interference in percussion and auscultation. The internist by means of careful study with the stethoscope, percussion, the electrocardiograph, the esophagogram, and the other tests for cardiac response, can determine the function of the heart which we expect to carry the extra load of pregnancy and labor. As the result of pregnancy the heart is obliged to perform on an average of 50 per cent more work than it did in the pregravid state. Stander states that in a normal pregnancy the cardiac output starts to rise above the normal level at the beginning of the fourth month. From the fourth month of pregnancy to full term there is a steady increase in cardiac output amounting to over 50 per cent of the normal value. The heart output slowly returns to normal after delivery and reaches its non-pregnant level by the end of the third week of the puerperium. Thus, as pregnancy advances a greater strain is put on the heart. We must realize that labor itself throws still a greater load on the heart, and in those hearts which are damaged the load may be too great to carry on. It is just a case of the heart being able or not being able to take care of the extra load required by the pregnancy. De Lee puts it very aptly when he states that, "Pregnancy evokes gross and fine metabolic and physical changes which put a strain on all organs of the body and which alter the quality of cardiac muscle and thus form a vicious cycle. The toxemic patients with heart disease are the most endangered."

During a pregnancy complicated by heart disease, we should strive to keep the patient as free from upper respiratory diseases as possible. Such infections as gripe, influenza, and severe tonsillitis may be factors in producing congestive heart failure, just as overexertion might do it. Patients should be cautioned to go to bed immediately at the onset of the slightest illness. If they follow this advice, they seem to recover as well as a normal patient; whereas, if they continue to stay up and about, cardiac failure develops.

Frequent examinations are necessary, and it has been found that the first danger sign of heart failure is likely to be persistent râles at the base of the lungs. The development of a cough, even if no other symptoms are present, should be another warning sign that the myocardium is laboring under a strain, and the patient should be put to bed. Other common symptoms which are likely to make their appearance are dyspnea on exertion, and edema. A good rule to follow is that as long as these patients are able to do their ordinary housework without being troubled with dyspnea, or any undue fatigue, they are not in any particular

danger. We must impart to these patients to the best of our ability a very optimistic attitude, because the element of fear has a destructive effect on heart muscle, and if this element of fear can be removed a great factor has been eliminated. The question of fear is one which has not received enough attention in the past. These little points are the ones which are so essential in satisfactory management. The real object in the prenatal management is to prevent heart failure during pregnancy and if this can be done, failure seldom occurs at labor. If the woman has been carried along successfully up to the time of labor by the cooperating internist, the obstetrician can usually deliver her successfully without failure occurring. Very little attention is now paid to the type of valvular lesion which is present because we are more interested in the efficiency of the myocardium and our plan is to preserve that myocardial reserve as much as possible.

The chief factor in the management of these cases is rest, and that should include not only physical but mental rest. The internist should outline in written instructions, definite hours for rest, the amount of housework to be done, the number of times daily the stairs should be climbed, and full details as to the diet which should contain all the essential foods as well as the vitamins. It should be stressed that she report immediately if cough, hemoptysis or dyspnea develop, and if these occur, hospitalization must be insisted upon. Remember these heart cases need to be watched very carefully and even the slightest symptom should be investigated thoroughly. If failure develops, the essentials of the treatment consist in prolonged bed rest, sedatives, massage, restriction of salt, and fluid. Digitalis, diuretics, and cathartics should be given under the supervision of the internist. Quinidine should not be used, as it is a quinine derivative, and is likely to set up uterine contractions.

A good rule is not to induce labor in the presence of a badly decompensated heart. It is only a common sense maxim that if a patient cannot restore her circulatory balance before delivery she is not very sure of doing it after labor. A point in favor of the cardiopathic patient is that prematurity is of common occurrence. As a rule these patients seem to have easy labors, providing there are no obstetric difficulties. Patients with heart disease should be advised during their pregnancy to sleep in a semi-recumbent position in order to avoid interference with excursions of the diaphragm and so interfere with respirations.

During the first stage of labor it is well to have these patients in a sitting position, and the object of the obstetrician should be to obviate the pains

as much as possible. The use of morphine and scopolamine will usually make this stage quite comfortable. During the first stage our purpose is to relieve pain and secure as much rest as possible. The second stage is the dangerous period for women with heart disease. It is the time when there is a real load placed on the circulation. At this time the internist should be carefully observing his patient. Providing there is no obstetric difficulty vaginal delivery is usually the method of choice. The second stage should be made as short as possible and this can be best accomplished by episiotomy and forceps. Delivery should be made from the sitting position. As to the type of anesthesia, ether seems to have stood the test of time, and is preferred by most obstetricians. However, spinal anesthesia can be used if desired. Immediately after delivery sand bags should be applied to the abdomen and the woman should be placed in a sitting position for three or four days.

Occasionally a Cesarean section has to be done, because of some obstetric difficulty, and if possible this should be elective. Certainly, remember this, never put a cardiopathic patient in the Trendelenberg position. If sterilization is demanded by the patient it can be done at the time of the Cesarean section.

While many of these women survive the pregnancy, we cannot feel that they can go on indefinitely, without cardiac failure occurring. Another factor which must be considered is the fact that they must be able to take care of their family. As to lactation it is a generally accepted fact that the decompensated cardiac patient should not be allowed to nurse her child. In conclusion again let me emphasize the importance of the co-operation between internist and obstetrician in the management of this tricky and treacherous complication of pregnancy.

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#### Discussion

**Dr. Martha Link, Dubuque:** I should like to have Dr. Theisen explain why a woman in that condition should not nurse her baby.

**Dr. Theisen:** We feel it is too much of an extra load on the woman and on her heart, to care for the extra work, in supplying enough milk for the baby. That is our reason for stating that we do not like to have them nurse the child, if it is a badly decompensated heart. If the heart is not decompensated, then certainly she can go ahead and nurse her baby.

**Dr. Frank M. Fuller, Keokuk:** It has been announced that these meetings are for men in general practice and not for specialists, so I am not speaking as an obstetrician but from the standpoint of a general man. Every woman has only a certain modicum of strength and endurance and energy. Under ordinary conditions, a man or a woman who is active and doing things gets tired toward the end of the day and is glad to sit down and read the evening paper or go to a movie or do anything else to relax, because they have used up during the day, with reasonable productive activity, the energy that they have.

Now, the average woman who is carrying on the duties of her home conscientiously and properly and rightly is using all her energies. When she becomes pregnant, it is exactly as though her sister should move out of town and leave her home in the care of this woman. If she has two homes to take care of, she says, "I am too tired; I can't do it," yet she gets into pregnancy, which is one of the biggest undertakings that any woman can take on herself, and has an additional load.

Your problem of cardiac relation to pregnancy simply comes down to a simple proposition: How much extra energy has that woman to take on an extra load? You wouldn't let a cardiac patient get out and run a race or take on special activities or duties. When she becomes pregnant, she is taking on an extra load. That is one of the things the average woman does not understand. "I used to be so strong and vigorous. Now that I am pregnant, I am not strong and vigorous." If she will just realize the limited amount of strength, if it is limited, if it is a small amount—when she takes on pregnancy, she is taking on an extra load. The whole problem of cardiac condition in relation to pregnancy is just exactly the same as in any other obligation of life. If you have heart trouble, you let down. So the directions for these women should be, "Leave alone some of the things you are trying to do. Cut out an occasional bridge game, if nothing else, and let your activities be limited to the one great job that you have on hand." In that way I think we will have less trouble with our heart cases in pregnancy.

## REASONS AND TECHNIC FOR THE LOBE DIFFERENTIAL COUNT\*

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In a differential count of the white blood cells, it is of advantage to classify the cells in such a way as to reflect the importance of their maturity and, so far as possible, their efficiency, as was advocated first by Schilling in 1911. Experience has shown that fairly constant relationships exist between the kinds of leukocytes present in the circulating blood and the general character of inflammatory reactions. Notable exceptions to these prevailing relationships are encountered, but enough is known of these individual peculiarities that many of them may be anticipated, and reckoned with accordingly.

In mild infections, the maturation within the bone marrow, and the delivery of neutrophils to the peripheral blood, not only keeps pace with, but may actually exceed the apparent demand for defensive cells, producing a leukocytosis of the adult mature efficient type. In severe infections, although there may be a great increase in the number of circulating leukocytes, nevertheless, the demand for mature white cells may be greater than the marrow can supply, and as a consequence large numbers of immature and less efficient leukocytes appear. In overwhelming infections, either quantity production or maturation, or both may be inadequate due to failure or paralysis of the functioning marrow. A long continued drain may exhaust the resources of formerly active marrow. Certain infectious irritants or toxins may fail to stimulate or they may actively inhibit production and maturation of granulocytes, resulting in a leukopenia with immature cells.

#### PRINCIPLES OF INTERPRETATION OF HEMATOPOIETIC RESPONSE

These hematopoietic responses are, by no means, mathematically certain, neither do they reveal the whole story of infection and resistance. Obviously, the differential count cannot give effect directly to the influence of immune bodies in the plasma and tissues, nor to detoxifying processes. It is a safe claim, however, in diseases that are of a predominantly infectious nature, that a series of differential counts properly made and logically interpreted, will reveal valuable information, obtainable in no other way.

Some failures and disappointing experiences in the practical application of the differential count are chargeable directly to inadequate methods of

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interpretation. In my judgment, it is a mistake to attempt to draw important diagnostic or prognostic inferences directly from the differential count itself. It is much more logical and satisfactory to make a systematic analysis first of a series of counts, and to classify the available inferences in an objective way; then, from this intermediate position, which is much broader and more comprehensive, it is quite possible to make certain observations of real clinical value. In other words, it is important to classify and diagnose the blood picture first before attempting any interpretation of clinical significance.

This classification of differential counts entails the adoption of certain standard limitations for each type of reaction, as suggested by Crocker and Valentine. While more or less artificial, these boundary lines, so to speak, between typical responses are based on experience and serve admirably for practical purposes. Different observers may find it advantageous to modify some of the arbitrary limits suggested herein, but the principle, itself, of designating categorically the type of leukocytic response is practical and useful.

#### TECHNICAL PROCEDURES AND DEFINITIONS

First, it is essential to adopt a uniform technic in preparing blood films for examination.

Although the distribution of leukocytes is slightly more even when blood films are made on cover slips, we prefer to use slides because of the ease and speed with which good films can be made.

1. Cover the slide with 15 drops of Wright's stain for one minute.
  2. Add 30 drops of buffer solution adjusted to pH of 6.45 for three minutes.
  3. Wash in distilled water and blot.
  4. Decolorize in 95 per cent ethyl alcohol for one second.
  5. Wash immediately in distilled water, blot, and dry.
- Buffer Solution: (a) Monobasic potassium phosphate, 3.31 Gms.  
 (b) Anhydrous dibasic sodium phosphate ..... 1.28 Gms.  
 (c) Freshly distilled water..... 1.00 L.  
 (d) Keep cool.

In distinguishing the myelocytes, juveniles, stabs and segmented neutrophils, we rely on the pattern of the nucleus. Neutrophils are classified as myelocytes when the nucleus is round or notched to the extent of less than 25 per cent of its diameter; juveniles, when the indentation is more than 25 per cent and less than 75 per cent of the diameter; stabs, when the indentation is greater than 75 per cent, but more than a mere filament. Separate lobed and filament forms are classified as segmented. The classification is somewhat artificial and arbitrary, but it assists greatly in arriving at uniform results where several persons are counting.

Moreover, it is desirable in order to obtain uniform and comparable results that those who examine the films shall agree on the same criteria in

differentiating one type of leukocyte from another. We prefer to use a large size multigraphed form on which a series of counts from the same patient, and the indices derived therefrom, may be tabulated in sequence. When the tabulation of a count has been completed, it is usually apparent at once into which type of reaction that particular tabulation falls.

Second, before designating the various reaction types, it is essential to understand the derivation of certain indices, and the meaning for present purposes of the following terms:

**Leuko(cyto) gram:** An analysis of the leukocytic response based on the number, kind, maturity and quality of the circulating white blood cells.

**Left shift:** An increase in the number of immature neutrophils.

**Right shift:** An increase in the number of poly-lobed neutrophils.

- |                        |   |
|------------------------|---|
| Type of<br>Left Shift: | 1. Degenerative: An increase in the stab forms and less than five per cent juveniles.           |
|                        | 2. Regenerative: An increase in the stabs, juveniles, and less than five per cent myelocytes.   |
|                        | 3. Leukemoid: An increase in the stabs, juveniles, and five per cent or more of the myelocytes. |

**Schilling index:** Ratio of immature to mature neutrophils.

$$\begin{array}{ccccccc} M & + & J & + & St & : & \text{Segmented} \\ 0 & & 0 & & 4 & : & 64 = \frac{1}{16} \end{array}$$

**Whole number index:** Schilling index multiplied by 16; it shows the number of times a shift is greater than normal.

**Lethal index:** Ratio of the number of myelocytes to the number of segmented neutrophils. As the lethal index approaches 1, the prognosis becomes more grave.

**Reproductive power:** Indicated capacity of the bone marrow for quantitative production of granulocytes. It is recorded as stimulated, irritated, strong, depressed, feeble, or paralyzed.

**Threshold:** Refers to the maturity of the neutrophils as they enter the circulation. It parallels the degree of left shift.

**Absolute number index:** Comparison of the total number of segmented neutrophils with the total number of immature neutrophils.

**Lymphocytic reaction:** An increase of large lymphocytes suggests the processes of walling off, healing, and repair. An increase of small lymphocytes suggests healing, repair or chronicity.

**Monocytic reaction:** An increase of monocytes is often associated with healing and repair. In tuberculosis it suggests activity of the process with attempted healing.

**Eosinophilic reaction:** Eosinophiles are usually absent during many mild and most severe inflam-



mations. They suddenly reappear in the immunolymphomonocytic healing stage. Reappearance is usually a good sign.

#### TYPES OF LEUKOCYTIC REACTIONS

With the foregoing in mind, the meaning of the following types of leukocytic responses becomes apparent.

**Type I Leukogram:** Is characteristic of an acute mild reaction of infectious or cytotoxic origin, caused by less virulent organisms or toxins, and involving mucosal and epithelial catarrhal inflammation. For example, the reaction of pregnancy, of incarcerated hernia, of ovarian cyst with twisted pedicle, and of internal hemorrhage.

Leukocytosis	10 — 20,000	Schilling index	1/8—1
Neutrophilia	75 — 90%	Whole number index	2—16
Lymphopenia	5 — 30%	Lethal index	0—1/10
Monopenia	0 — 4%	Left shift: degenerative	
Eosinopenia	0 — 2%	Regenerative power: strong	
		Threshold: increased or slightly depressed	

A high leukocytosis with a high neutrophilia but slight degree of left shift favors a non-infectious stimulation. A leukocytosis with moderate neutrophilia with moderate or marked left shift favors an infectious stimulation.

**Type II Leukogram:** Characteristic of an acute severe reaction of infectious or toxic origin, with virulent organisms, involving submucosae, soft tissues, bones, and organs, with purulent exudate, phlegmonous infiltrations and suppurations with or without gangrene. This type of response is seen in diphtheria, pneumonia, meningitis, peritonitis, empyema, osteomyelitis, septicemia, heavy metal and illuminating gas poisoning.

Leukocytosis	10 — 100,000	Schilling index	2—20
Neutrophilia	90 — 98%	Whole number index	30—300
Lymphopenia	0 — 10%	Lethal index	1/10—1
Monopenia	0 — 4%	Left shift: regenerative	
Eosinopenia	0	Regenerative power: severe	
		irritation	
		Threshold: severe depression	

High leukocytosis, high neutrophilia, regenerative type of left shift, high indices, toxic granules indicate a moderate or high defensive force, but one of poor quality.

**Type III Leukogram:** Characteristic of an acute overwhelming reaction of infectious origin (leukemoid), with virulent organisms and toxins, generalized septicemia or toxemia, and greatly impaired or paralyzed resistance. This type of response is seen in severe septicemia, with or without euphoria, delirium, convulsions and petechiae, pneumonia, meningitis, peritonitis, puerperal sepsis, and gas gangrene.

Leukopenia	10,000 — 1,000	Schilling index	3—30+
Neutrophilia	90 — 100%	Whole number index	50—300+
Lymphopenia	0 — 10%	Lethal index	1/4—1+
Monopenia	0 — 2%	Left shift: leukemoid	
Eosinopenia	0 —	Regenerative power: paralyzed	
		Threshold: severely depressed	

A primary leukemoid reaction indicates a poor prognosis. The total leukocyte count is not re-

liable. Several leukograms are requisite to establish the trend of the reaction. A secondary leukemoid reaction (Type III following Type II) means bone marrow exhaustion.

**Type IV Leukogram:** Characteristic of a subacute or chronic inflammation with lymphomonocytic reaction of chronicity or healing; a low grade or acute infection becoming chronic or a subsiding acute infection. This type of response is seen in chronic infectious arthritis, chronic empyema, subacute or chronic pyelitis, neoplastic inflammatory reactions, focal infections, chronic abscess, and subacute bacterial endocarditis.

White blood cells	6 — 15,000	Schilling index	less than one
Neutrophiles	50 — 70%	Whole number index	less than 16
Lymphocytes	30 — 50%	Lethal index	0—1/8
Monocytes	5 — 10%	Left shift: regenerative	
Eosinophiles	1 — 5%	Regenerative power: strong but irritated	
		Threshold: slightly depressed	

The most significant feature brought out in successive tabulations of the differential count is the rising lymphocytosis, monocytosis and eosinophilia, as the neutrophilia subsides. The associated pathologic processes are: walling-off, localizing, lymphocytic immuno-healing, regeneration and repair; clinically, convalescence.

**Type V Leukogram:** Characteristic of acute infections which fail to stimulate or actually inhibit granulopoietic reactions. This type of response is seen in typhoid, measles, influenza, malaria and mumps. In typhoid particularly the degree of leukopenia parallels the severity of the disease.

Leukocytes	1 — 10,000	Schilling index	1/2—2
Neutropenia	50% or below	Whole number index	8—32
Lymphocytosis	3% or above	Lethal index	
Monocytosis	6 — 20%	Left shift: degenerative	
Eosinopenia	0 — 2%	Regenerative Power:	
		1. Inhibition of neutrophiles	
		2. Stimulation of lymphocytes	
		Threshold: slightly depressed	

Relative and absolute neutropenia, and relative or absolute lymphocytosis are characteristic. In low grade chronic infections (such as syphilis and tuberculosis), which stimulate lymphopoietic reactions, the leukocytic response closely simulates Type V, and cannot be distinguished, as a rule.

#### CLINICAL INTERPRETATION

In the interpretation and clinical application of the foregoing types of leukocytic response, one should endeavor to think in terms of pathology, of advancing or receding infection, of chronicity, of healing, and of location, rather than of separate disease entities. The more strictly objective an interpretation can be made the less likelihood of error. For example, a series of three or four consecutive leukograms classified in Type I category, should suggest an acute catarrhal inflammation of a mucous surface, rather than an acute appendicitis or strangulated inguinal hernia. A Type II

leukogram following Type I in sequence may suggest a purulent or phlegmonous extension of an acute catarrhal inflammation.

From both diagnostic and prognostic standpoints, it is very important to consider the part of the body involved. The same series of leukograms may suggest a fatal outcome in an intracranial infection, grave in pulmonary, serious but hopeful in abdominal, but of slight concern in the pelvis. Mastoiditis may readily extend to and involve the meninges, or set up a lateral sinus thrombosis, resulting in septicemia. Rupture of an aneurism may be rapidly fatal. The Type I or II reaction of a cardiac infarction gives no warning of rupture with a fatal hemopericardium. Similarly in acute appendicitis, gangrene or perforation may develop quickly and cause general peritonitis without hematologic or other warning. Indeed the Type I reaction of an acute mildly infectious focus may not give way to a more serious type of reaction until after the initial local lesion has become seriously complicated. In pneumonia the leukogram is of no value in predicting a clinical crisis. The right shift may lag one or two days behind the appearance of the crisis. However, a daily series of tabulations at this critical time in the course of pneumonia may be of great practical value in heralding the complication of empyema.

The leukocytic responses of young children are much more prompt and extensive (higher indices, and a greater degree of left shift) than in similar adult infections. The leukemoid reactions with leukocytosis is of less significance in children than in adults. Successive tabulations are essential to establish the trend of the response.

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## SOME NEW FACTORS IN THE DIAGNOSIS OF ACUTE APPENDICITIS\*

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The host of conditions incorrectly diagnosed as appendicitis is an old story. Neither do I wish to burden you with an itemization of the forty-odd diseases that can cause pain in the right lower quadrant. Two basic factors must be kept in mind in any discussion of this subject. First, the marked variation in the position of the appendix bringing it to lie deeply in the loin in a retrocecal position, or high in the abdomen near the liver and biliary ducts, with an undescended cecum. It may cross over or be confined to the left abdomen or hang down into the true pelvis suggesting disease of the distal colon or pelvic organs, Figure 1. In

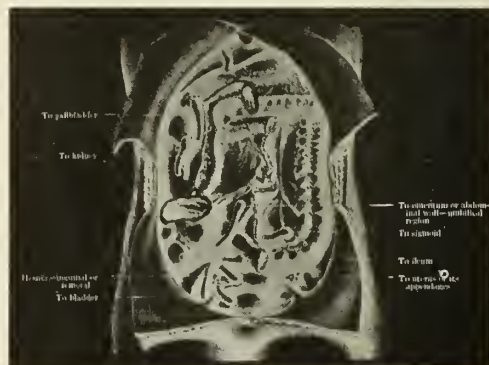


Fig. 1. Diagram to show the various points of attachment of an inflamed appendix. (After Kelly, Hurdon.)

the second place, there is the factor of variation in individual reaction to an infection which may in itself account for an atypical picture sufficient to make some diseases for differential diagnosis seem irrelevant.

There are, on the one hand, the common problems involving this diagnosis with which we contend almost daily. The pelvic inflammations are usually clarified by a history of gonorrheal or abortional etiology, by the relation to the menstrual cycle, and by careful pelvic examination. The urinary tract diseases can ordinarily be differentiated by a thorough urine analysis including microscopic study, perhaps of a catheterized specimen, by the flat x-ray plate of kidneys, ureters and bladder in search of calculi, and if necessary, by emergency cystoscopy without hesitation.

There are so many diseases entering into this discussion, the majority fortunately warranting laparotomy, that I mention them merely to remind you that they are often not correctly diagnosed

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because the physician does not think specifically of them, and little points in the history taking and physical examination are neglected. In the pelvis are the ectopic pregnancy and the twisted ovarian cyst. In the gastro-intestinal tract are the partially walled off perforated peptic ulcer, Meckel's diverticulitis, and in children, early intussusception. Occasionally an acute pancreatitis or acute cholecystitis may prove elusive preoperatively. Fortunately, the alert operator will discover these when he finds insufficient appendiceal pathology.

There are also the rare cases seeming to clutter the literature as isolated case reports—such general diseases as Henoch's purpura,<sup>1</sup> poliomyelitis,<sup>2</sup> or local entities, as strangulated epiploic appendix,<sup>3</sup> perforation of the cecum by foreign body<sup>4</sup> or of the ascending colon by nonspecific ulcer,<sup>5</sup> etc., all simulating appendicitis.

Detailed discussion of the common textbook differentiations would be only a repetition to you, while time does not permit discussion of the rare pitfalls. There are however several conditions, some rather recently noted, sufficiently outstanding to be emphasized in a practical differential diagnosis of acute appendicitis.

#### ACUTE MESENTERIC LYMPHADENITIS

This is not the rather rare tuberculosis tabes mesentericus, but an acute disease characterized by the presence of numerous enlarged soft lymph nodes filling particularly the distal portion of the mesentery of the small bowel. The mesentery appears thickened and some free fluid may be present. (Figure 2). The source of the infection



Fig. 2. Showing the thickened mesentery.

manifestly is within the intestine, but there is usually no reason to suspect that an active enteritis exists. Freeman<sup>6</sup> and Struthers<sup>7</sup> believe that the infective agent gains entrance to the nodes by absorption from a catarrhal mucosal inflammation, perhaps from ingested milk or other food which is contaminated. Systemic glandular involvement is not in evidence, as is usual in glandular fever or infectious mononucleosis. Histologic study of the mesenteric glands reveals a simple hyperplasia. The disease is found in children of both sexes and occasionally in young adults. Wilensky<sup>8</sup> reports in 1920 that all recorded cases of this disease were discovered only at operation. Seldom now is the preoperative diagnosis made, probably because of the tendency to think of appendicitis before anything else.

There is abdominal pain diffuse with a predilection for the right lower quadrant, due perhaps to the fact that the mesentery in this region usually shows greatest lymphatic involvement. For the same apparent reason the pain often runs into the back. It is usually not severe and often is difficult to locate with exactness. Distinct abdominal colics frequently occur which come and go quickly without apparent cause. These probably are the result of spasm of the bowel, which occurrence has been reported seen at the time of operation. These paroxysmal colics came to my attention recently when a physician made two calls at night because of colicky pain only to find the child asleep when he shortly arrived. Subsequent laparotomy for acute appendicitis disclosed instead an acute mesenteric lymphadenitis.

Abdominal tenderness is always present, but it is more diffuse and not so pronounced as is usual in appendicitis. Its general location is toward the right lower abdomen.

Abdominal rigidity is not a prominent feature and is often absent. When present it is rather diffuse with a tendency toward the right side. The spleen is not palpably enlarged.

Various gastro-intestinal disturbances may exist particularly anorexia, nausea, and constipation. Occasionally diarrhea is evident. Moderate fever and leukocytosis are usually present. There is an increase in the polymorphonuclear leukocytes in contrast to the monocytosis of glandular fever.

*Broadly, when one encounters a child with moderate abdominal pain and tenderness, and little or no rigidity manifested indefinitely in the right lower quadrant with digestive symptoms, loss of energy and moderate rise in temperature and polymorphonuclear leukocytes, one should con-*

sider a possible mesenteric lymphadenitis particularly if the symptoms have persisted two or three days and are associated with frequent intestinal colics.

#### RUPTURE OF A GRAAFIAN FOLLICLE, CORPUS LUTEUM AND SMALL FOLLICULAR OR LUTEAN CYSTS

Since 1905 attention has been drawn to this group from time to time mainly by scattered case reports. In 1933 Meigs and Hoyt<sup>9</sup> published one of the first comprehensive reports from Massachusetts General Hospital with a three year series of twenty-six cases.

The pathology consists of persistent bleeding from the edge of a recently ruptured follicle, from a superficial vessel of a corpus luteum or from the edge of a ruptured follicular cyst of the ovary. In the first two types the blood vessels open up after the normal physiologic process of ovulation should have closed them. Operation could be avoided in the majority of cases because the bleeding usually ceases spontaneously. In the others surgery may be indicated because of extreme hemorrhage.

Intelligent interpretation of the history and findings in these cases is very important. The greatest difficulty lies in differentiating rupture of an ovarian follicle from appendicitis. Most cases give a history clearly simulating an attack of appendicitis with pain, nausea and occasional vomiting. The pain of appendicitis however is usually gradual in onset and of crampy nature at first; whereas in rupture of the ovary, whether mild or severe, pain is almost always very sudden, often stabbing in character. This suddenness of onset of pain is of considerable importance in the differential diagnosis. The time of onset of the pain in relation to the day of the menstrual cycle is important. Over 60 per cent occur approximately two weeks after the menstrual period. No cases reported have had abnormal vaginal bleeding which is of some aid in differentiating ectopic pregnancy.

There is tenderness and often spasm of the lower abdomen. Rectal tenderness may be present on the right or left and often pain is elicited on moving the uterus. No demonstrable mass is made out. Considering the amount of pain and discomfort, the temperature, pulse, and white count are little affected, the latter varying from 8,000 to 12,000 per cubic millimeter.

These patients are usually operated upon with a diagnosis of acute appendicitis, although operation is not indicated except in rare cases of mas-

sive hemorrhage. In cases of doubt, observation for a few hours may be justifiable. Knowing the grave danger of delay in appendicitis and the slight danger in exploration, it is wiser of course to operate if the symptoms do not subside.

Occasionally upon opening the abdomen, bloody fluid is at once seen. Many times nothing abnormal is noticed. The appendix does not look diseased and upon exploring the pelvis, bright red blood is usually found. Upon picking up the ovary

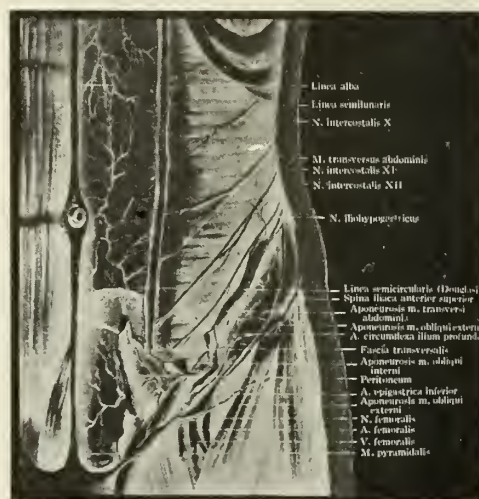


Fig. 3. Muscles, aponeuroses, arteries and nerves of the anterolateral abdominal wall. The external and internal oblique muscles have been removed from the left side.

oozing is seen, although often the bleeding has previously stopped. Peculiarly the right ovary has been involved in most cases. In five cases which I have personally seen, only one presented massive hemorrhage. It was diagnosed a twisted follicular cyst of the ovary preoperatively because on the side opposite the hemorrhage there was such a cyst. Except for this incidental cyst the case would likely have been diagnosed appendicitis. The other four cases were all erroneously diagnosed acute appendicitis.

#### DISEASES OF THE CHEST

A third group of cases, namely diseases of the chest, is, I believe, deserving of emphasis in a discussion of appendicitis. Although we are all fairly cognizant of the frequency with which intrathoracic affections produce abdominal symptoms, too frequently their importance is minimized. Most of us believe that such an error could never really happen to us and yet it does. Experimental data such as the work of Capps and Coleman<sup>10</sup>



show us that the nerve supply to the lateral rim and the posterior one-third of the diaphragm is not supplied by the phrenic nerve but by the lower six intercostal nerves. Irritation of these diaphragmatic areas causes referred pain over the course of these nerves both in the upper and lower abdomen. Anatomically we must remember that not only the lungs and pleura but also the heart and pericardium are in relation to this portion of diaphragm. (Figure 3).

We are, of course, all agreed on the necessity of a thorough chest examination particularly in children and young adults. Characteristically pneumonia is ushered in with a chill and high fever. The leukocytes early are higher than we expect with early appendicitis. Abdominal tenderness is rather diffuse and any rigidity is likely



Fig. 4. View of the retroperitoneal structures showing the right and left abdominal fossae and the pelvis.

to yield. The ordinary physical examination, particularly in smaller children and in adults with deep consolidation, may be inconclusive. Here radiographs of the chest may be of inestimable value and often clinch the diagnosis, especially in the crying child. The chest examination should also include the heart and pericardium, particularly when a possibility of rheumatic fever exists. Throughout the literature cases are reported in which a patient has been operated upon for appendicitis, but a normal appendix was found; subsequently a pericardial friction rub was discovered, or an acute rheumatic arthritis became manifest. In this group, the eliciting of a rheumatic history, incidence of pain in the shoulder from phrenic radiation, and atypical abdominal findings, particularly lack of rigidity, should warrant caution.

#### ACUTE RIGHT ILIAC LYMPHADENITIS

Briefly, I wish to mention perhaps an uncommon differentiation from appendicitis which, with the increased incidence of fungus growth on the feet, and secondary infection, may increase somewhat in importance. Acute iliac lymphadenitis involves those nodes along the iliac vessels, being on the right side in close relation with the appendix. This inflammation may not be associated with the easily demonstrable inguinal involvement. (Figure 4.)

There was admitted, December 15, 1933, to the surgical service of the University of Iowa, General Hospital, a boy, ten years of age with a history of localized pain and tenderness in his right lower quadrant for three days. There was involuntary rigidity in this region, maximum at McBurney's point. He had a count of 12,000 leukocytes and a fever of 101 degrees. A diagnosis of acute appendicitis was made and a laparotomy was performed. The appendix was normal. Upon lifting up the cecum, there was a localized fluctuant mass, retroperitoneal, and in relation to the right iliac vessels. An appendectomy was done, the incision was closed, and then a second incision was made, just medial to the right anterosuperior iliac spine, draining, extraperitoneally, a suppurative iliac lymphadenitis. Attention was then turned to the right lower extremity where there was found on the dorsum of the foot, a circumscribed infection practically healed, with an overlying irregular scab. It seemed likely that the iliac lymphadenitis was secondary to this infection.

#### ACUTE SEMINAL VESICULITIS

There has been considerable discussion of late on the difficulty in differentiating certain cases of acute seminal vesiculitis from appendicitis. With the widespread incidence of gonorrhea, it is surprising that this problem does not arise more frequently. In the usual case there is of course dysuria, pain in the lower back and a history of recent Neisserian infection. Usually a coexisting epididymitis clarifies the diagnosis. Pugh<sup>12</sup> reports in 1930, fifteen patients with acute seminal vesiculitis, erroneously subjected to appendectomies. The patient is seized by pain in the right iliac fossa and has corresponding tenderness, associated with gastro-intestinal disturbance, fever, and leukocytosis. Careful examination of the epididymis spermatic cord, and particularly the finding of swollen tender seminal vesicles by rectal touch will result in an accurate diagnosis. The importance of rectal examination in any suspected

case of appendicitis is well expressed by the old saying, "If you don't put your finger in the rectum, you are likely to get your foot in it."

#### SUMMARY

1. Although the ordinary type of acute appendicitis usually presents little difficulty in diagnosis, the probability of a condition being appendicitis does not absolve one from the obligation of making a complete examination of the patient. The possibilities and vagaries of the problem would seem without limit, and the accuracy of one's diagnosis largely depends upon the care taken in studying the individual patient.

2. Several diseases, some more recently noted, sufficiently to be emphasized, are differentiated from acute appendicitis. A definite responsibility which cannot be neglected is involved. Although an operation is not ordinarily helpful in these conditions still they simulate acute appendicitis in which an operation is usually imperative. Therefore, after thorough general examination, if doubt as to diagnosis still exists and delay is not warranted, it is, of course, wiser to explore than to accept the jeopardy of a possible perforated appendix.

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#### Discussion

**Dr. Lester D. Powell, Des Moines:** I think we owe a vote of thanks to Dr. Cooper for his very extensive study on the differential diagnosis of acute appendicitis. It shows a great deal of work on his part. There is very little left for me to say.

Acute appendicitis still holds the record of being the most common acute surgical condition found in the abdomen. For that reason, if we operated on all patients with abdominal pains we would be correct in approximately sixty per cent of all cases. As he

stated, most of our pitfalls will be eliminated if we take a careful history and make a thorough examination. There was one point that he brought out which I think would be of great value to all of us. If, in getting a history of any individual, we find that they have had chills as one of their symptoms prior to examination, in most cases, outside of the suppurative appendix of the child, we can feel that we are dealing with something other than acute appendicitis. The mesenteric lymphadenitis which he spoke of is one of our most difficult diseases to differentiate from acute appendicitis, and in such cases I think that anyone is justified in an exploration where differential diagnosis seems impossible. The fungus diseases which he mentioned can usually be eliminated. Seminal vesiculitis, which sometimes presents a troublesome picture, can be eliminated usually by a rectal examination. It carries me back some few years when I was in school and listened to Dr. C. P. Howard who said, "No examination is complete without a rectal examination." Usually such examinations will make possible the correct differential diagnosis.

I want to thank Dr. Cooper again. I have enjoyed his paper very much. If we remember that he did not have a paper on the treatment of appendicitis but on the differential diagnosis, I think we can feel that he has covered the ground as thoroughly as is possible.

#### INTRA-URETHRAL PROSTATECTOMY

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The history of prostatectomy prior to the days of the intra-urethral operation is too well known to discuss very extensively. The suprapubic operation which was done almost universally carried with it a very high mortality rate in the average hands, and too high a death rate even in the hands of the more skilled operators. The months of hospitalization and many times weeks of continuous bed treatment in aged people left a great deal to be desired. The long period of suprapubic drainage, the continuous urinary odor of the patient and his surroundings, continuous necessity for dressings, the complicated procedure necessary for any attempt at cleanliness will be only too vividly described by any man who has gone through this experience. It is true that the perineal operation, in a few hands, offered a lower mortality rate and possibly better results. The limited number of patients, however, who could be handled by these few individuals was definitely a handicap here.

Added to this, frequent sterilization in younger patients and the many more or less permanent complications that resulted, made prostatectomy a thing to be avoided as long as possible. Avoiding it as long as possible not only meant prolonged inconvenience, discomfort and invalidism in the



average patient before treatment could be carried out, but added to the permanent injury to the kidney and secondarily to the whole cardiovascular-renal system.

The intra-urethral operation potentially has eliminated all of the objections to the old methods of treatment. It is true in my experience at least that the referred cases are still brought in entirely too late. Residual urine has been present for some time, urinary infection has been well advanced, renal function is temporarily if not permanently impaired, and in fact the majority are suffering from acute retention at the time of admission. With education of, first the medical profession, and later, the lay public, these cases should be as uncommon as the enormous ovarian cyst of former days. If the average doctor would realize that the beginning of nocturia, the lessening of the size of the urinary stream, the slow starting and incomplete ending of urination and periodic minor bladder disturbances usually mean an enlarged prostate gland, they would be in a position to take care of these patients while it is still a very simple matter. I have had in my own practice, patients in the late fifties, who have gone to the hospital, been operated upon the next day and were out of the hospital back to their business inside of a week. As yet I have had no such cases referred.

A very brief technical description of the operation should be adequate. It might be described as an apple-coring procedure. No attempt is made to remove the entire prostate gland. That portion of the gland which tends to occlude the prostatic urethra is removed to give unobstructed urinary passage through this structure, and this is all that is necessary for complete relief. This tissue is taken out in small pieces in amounts varying from five to forty or more grams. In the average case eight to twelve grams of tissue will give adequate results. There are three general types of operation. The McCarthy resectoscope cuts these pieces out under full vision by means of a loop connected with a cutting current. The Davis Bumpus punch is a circular knife worked through a Braasch direct vision cystoscope which cuts only within its sheath. The circular line of incision is previously coagulated with a series of needles connected with a diathermy machine. The third method is the Caulk cautery punch in which the cutting is done by a circular cautery knife. All of these methods have given excellent results in the hands of their originators and many others. My personal experience is limited to the Davis Bumpus punch and the McCarthy resectoscope. My only choice between them is one of expediency. Like the majority of men now doing this work I have

definitely limited the operation at present to the McCarthy instrument because my training, as in the majority of other operative cystoscopists, has been largely confined to the closed lens system of operative instruments. I personally doubt if there is any choice between any of these procedures as far as terminal results are concerned or in the number of complications encountered. The technic for both the benign hypertrophy and the malignant cases is the same. It has been the experience of most operators that, in the malignant cases, death from carcinoma ensues before urinary obstruction returns. We are finding occasional reports now of reoperations being necessary after a few years, but it is assumed that the need for a second operation is because smaller amounts of tissue were removed in the earlier cases. There is a definite tendency at present in removing large amounts of tissue to do the operation in more than one stage. Anesthesia in the great majority of instances is spinal. This anesthesia offers complete relief from pain and adds practically nothing to the danger of the treatment. To the average doctor a prostate gland offers a situation which must be corrected for his patient to retain or regain the health to which he is entitled. If he is not to carry out the treatment himself, he is interested first, in the mortality rate of the procedure concerned; second, in the comfort of his patient while the procedure is being carried out; third, in the promptness and completeness of recovery; and fourth, in the expense and time involved. It is from this angle that we intend to approach the subject in the present discussion.

The mortality rate in the intra-urethral operation has probably approached as near zero as possible in any mortality rate in any major surgical procedure in elderly people. From the operation itself the patient can only die of hemorrhage, shock and ascending renal infection. With modern equipment, ordinary care and the use of accepted methods, hemorrhage is entirely within the control of the operator. With the elimination of extremely long operations of the second stage method in the more serious cases, shock practically does not exist. The third danger of ascending infection was a real one until the operators came to realize that the preoperative attention in these patients must be just as carefully and just as thoroughly carried out as in the old operation. If infection has become severe, prolonged drainage and irrigation by catheter should be carried out. In those cases, which fortunately are not common, where this is impossible, suprapubic drainage may be necessary. This not only serves to clear up the infections which have resulted from urinary

retention but definitely improves the function of the kidney, both as determined by blood chemistry and by the ordinary urinary function tests. These patients are extremely old in many cases and the majority of them have other pathologic conditions. Four of my patients have been eighty-seven years of age or older. It is perfectly evident to anyone that these people are so nearly worn out they may die at any time from any one of a number of things.

The deaths in intra-urethral prostatectomy are practically limited to these complications or to carrying out the procedures in patients who cannot be, or are not, properly prepared. The mortality figures at present compare favorably with other major procedures done to adults of any age. There are, of course, occasional undesired complications following this operation the same as after any other procedure. The most common one is epididymitis which while it is not dangerous is exceedingly uncomfortable and delays recovery. There are operators who do routine vasectomies which of course constitute a minor procedure perfectly harmless in older men. An equally large or larger number of men only do this occasionally. In the extremely feeble, where one added pathology might be of importance I believe this is a good procedure. As a routine precaution we have had no occasion to regret not doing it. Another possible complication is the loss of permanent control. We have had no experience with this complication, and we do not feel in a position to discuss it. The accepted procedure is that all resection should be carried out proximate to the utricle, and theoretically at least after this is done, no loss of control should result. Rectovesical fistulae have been reported but these are due to technical errors and should not be very common. Intravesical explosions have on rare occasions been reported, but this does not happen if irrigation is properly carried out during the procedure and gas is not allowed to accumulate in the bladder. There have been cases where suprapubic openings have been necessary to control hemorrhage.

It is not surprising that these complications should result with a new procedure as highly technical as the one discussed. They are not very common in the newer reports and should disappear entirely.

The question of the patient's comfort is almost directly dependent on the severity of the infection. If the bladder is badly inflamed, and the case has been neglected for a considerable period, continuous catheterization may be uncomfortable. Usually, however, the patient adjusts himself to this procedure rapidly. The operation itself is

tedious but entirely without pain. Most patients are tired when they leave the operating room. There may be some nausea, some headache, occasionally a little shortness of breath, in short there may be any complication you may encounter in a spinal anesthesia. The postoperative pain is many times entirely absent, is never severe and can be easily controlled. After the catheter is removed burning on urination is complained of by some patients during the first twenty-four hours or sometimes longer. This severe burning, however, is short-lived. There is some slight burning and irritation on urination in the average patient from two weeks to two months after the procedure is carried out. This does not in any way incapacitate them and in fact is preferred by most patients to the experience in urinating they had prior to the time of their treatment.

After the preoperative preparation is completed and the patient has been operated upon, he is able to urinate with rather poor control as a rule when the catheter is removed forty-eight hours after the operation. If it is definitely known that more tissue must be removed it should be removed at this time.

If it is found two or three days after the operation that urination is still difficult or impossible, or too much residual urine, remains, more tissue is resected and free urination is postponed for another forty-eight hours. At the end of this time unless the patient has other pathology he is out of bed, knows when he is going to urinate, but it is extremely uncomfortable for him to attempt to postpone the emptying of his bladder. This is usually the situation at the time that he leaves the hospital on an average of five to seven days post-operatively. The capacity for retaining the urine over longer intervals is rapidly regained in the next week or two. Pus remains in the urine on an average of about two months because it takes approximately this length of time for complete healing of the prostate gland to take place. After this length of time there are no complications, control of urine is complete, and the bladder empties rapidly and completely. Many of these patients still, however, arise once at night to urinate. Others are able to retain the urine throughout the night.

The question of time and expense is the last but nevertheless an extremely important consideration in our present economic situation. The actual medical expenses vary little from the former methods as far as the patient is concerned. There is an enormous saving, however, on hospital and nurses fees. In fact the reduction along this line brings the patient relief at considerable less than



half that which it formerly cost him. This, of course, does not take into consideration the enormous amount of time saved which is difficult to evaluate depending entirely on how valuable the patient's time may be. Whether or not his time is valuable from a financial standpoint, it is always important to him, and he is afforded a great deal of satisfaction in carrying out the procedure with a minimum amount of time spent under treatment.

The time involved depends entirely on the patient. The average patient should require about forty-eight hours to make a proper preliminary check-up. Complete physical examination, complete urinary check-up, blood study and other procedures indicated in that particular patient are necessary. The nonprotein nitrogen and creatine determinations are essential. Phenolphthalein function tests should be done routinely and there is considerable value in the more complicated procedure of urea clearance determination. While forty-eight hours is usually consumed in this determination the continuous catheter drainage is being carried out so that the time is also being utilized for operative preparation. The average patient can be operated upon three to four days after admission and leave the hospital from four to seven days after that. Many patients are only in bed two days. The early cases mentioned previously in this paper where the prostate enlargement is not too far advanced may spend as little as four days in the hospital. Of course we have individual cases that still require several weeks because of severe complications.

This discussion has not been presented as a scientific treatise with any idea of increasing the fund of information and knowledge regarding this procedure. I am fully aware of the fact that I am not in a position to do this. It is, as stated above, only an effort to give definite information in regard to the procedures as carried out at present for those who may be interested in such information. In conclusion I wish to sum up a fair attitude toward this method of treatment in view of the information available at present.

No defense of the claim that it is unquestionably the procedure of choice is necessary. It is universally accepted by practically all the better known genito-urinary surgeons. It is true there is still a handful of the older men who have not changed their methods. This experience, however, is true of any procedure, no matter how meritorious it may be. This method of treatment is also being handicapped in some of the smaller communities by surgeons who are not trained to do this type of operation, and insist it is only in the experimental stages and can be done in only

the larger centers. This number is small and includes only those people whose interest in their own financial situation is in no way influenced by a desire to be perfectly honest with their patients. The procedure has been written of so optimistically, and the short time required so emphasized that many men expect too much. In my own two years of experience with this treatment I have encountered along with this hypertrophy of the prostate gland, carcinoma of the bladder, multiple papilloma of the bladder, severe pyelonephritis, cardiac decompensation, acute intestinal obstruction, strangulated hernia, severe strictures of the posterior urethra, congenital stenosis of the meatus, and other complications.

It is perfectly plain to any fair minded physician that the treatment of the prostatic hypertrophy is only a portion of the attention these patients need. They cannot be taken into the hospital, treated and discharged in a very short time as can the patient with the uncomplicated prostate gland. Their treatment must be adjusted, both as to procedure and time, to the clinical picture as a whole presented in the particular patient. The solution to this is early treatment of the prostate gland before other complications arise, or if the complications arise first the prostate gland will not be so bad but what its treatment can be postponed to a more opportune moment. In short prostatic involvement in old people can now be handled with an ease out of proportion to other serious procedures in surgery. The mechanical and technical advance is probably the outstanding surgical improvement of the last decade.

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## THE MANAGEMENT OF FUNCTIONAL CONSTIPATION\*

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The problem of chronic constipation may seem rather commonplace and unimportant on first thought, but if one makes a careful analysis of the subject one cannot help but be impressed with the fact that this condition constitutes one of the major problems of modern medicine, and deserves the serious consideration of the medical profession. Constipation, as a complaint, is probably the most prevalent to which patients are subject, and is a frequent remote cause of serious illness. It should be accorded more study, attention and research. The increasing incidence of this disease is due in part at least to the propaganda being broadcast daily by nostrum vendors who have physics for sale. Children and adults are being led to believe

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that the intestinal tract is a sewer, which must be flushed out daily in order to eradicate poisons and prevent that supposedly serious condition auto-intoxication. As a result of these vicious propaganda the American people are developing a mass fear neurosis and the physic habit is entering many homes. It has been said, and I believe it is true, that if it were possible to take all purgative drugs off the market, the incidence of constipation would soon be reduced 50 per cent.

There is a distinct tendency to neglect the patient whose only complaint is constipation, and I should like to emphasize that these people are clinical problems and should be studied thoroughly. There can be no standardized treatment. The results obtained will be directly proportionate to the amount of study given each case and the meticulousness with which instructions are given.

One cannot hope to treat a case of constipation intelligently, unless he is familiar with the various factors which can play a rôle in the production of the disease, and is able to evaluate properly each cause. A knowledge of the clinical forms of constipation is also essential.

A consideration of the organic causes of constipation is without the scope of this paper and I will consider only the etiologic factors which result in purely functional disturbance. The most important of these may be outlined as follows:

1. Drugs and enemas.
2. Neglect or laziness.
3. Diet.
4. Neurogenic.
5. Sedentary habits.
6. Constitutional predisposition.
7. Vitamin deficiency.

The habit of taking purgatives which irritate the intestinal mucosa, frequently begins in childhood; yes, even in infancy. The false idea still prevails with many parents that every minor ailment must be treated with cathartics. Even adults are prone to treat common colds, fevers, headaches, all types of infections, and abdominal complaints with physics. We realize that elimination therapy cannot eradicate infections, but the laity is being crammed full of false ideas of the dangers of auto-intoxication. This theory is very appealing to the lay mind, but it fades under the scrutinizing eyes of science. It is high time that the medical profession acquaint the general public with the fact that the bowel is a functioning organ, and unnecessarily insulting it, especially repeatedly, can do nothing but harm.

Next in importance comes voluntary neglect or plain laziness. If one takes into consideration the physiology of the intestinal tract it becomes ob-

vious that failure to heed nature's call must necessarily result disastrously. As you well know, the intestinal tract is constantly under the influence of the autonomic nervous system. The sympathetic system increases tone and peristalsis, and the parasympathetic system from the vagus does just the opposite. The proper balancing of these two systems for the most part, controls the activity of the bowel. This is important because the autonomic nervous system responds to many types of stimuli such as chemical, mechanical, nervous and thermal. Reflex stimulation is also very important in influencing intestinal activity, and these reflexes arise chiefly in the stomach and duodenum. Food in these organs brings into play the gastrocolic reflex which initiates mass peristalsis of the colon. It naturally follows that the correct time for a bowel movement is after a meal, preferably breakfast. Daily neglect to respond to the impulse which nature has provided, results in gradually lessening sensibility and constipation begins.

Errors of diet are among the most common causes of constipation. Many cases can be cured, and practically all benefited by a proper diet. It should be remembered that it is possible with diet alone, to supply both the mechanical and chemical stimuli so necessary for efficient bowel activity. The typical American meal is notoriously deficient in residue—chemical stimuli, and Vitamin B. The average meal consists of meat, white potatoes, white bread, pastries, and insufficient fresh fruit, vegetables, and other residue producing foods. Vitamin B deficiency is a real factor in some cases, especially in children, and an ample supply of this vitamin should be provided in the diet, or by means of supplementary feeding if necessary.

Neurogenic causes do not receive the attention they deserve. I have pointed out that bowel action depends to a great degree on the autonomic nervous system. Anything which can disturb the proper balance of this system can start constipation. Worry, fear, fright, anxiety, unsatisfactory environment, insomnia, and fatigue may all serve to cause nerve imbalance.

In considering the individual case of alleged constipation, before proper treatment can be instituted three things must be decided. First, is the patient really constipated? Second, if so, where is the intestinal stasis located? A delay in the transit of feces through the colon is known as colonic constipation. Accumulation of the stool in the rectum and sigmoid with inefficient evacuation is termed dyschesia. These two conditions may coëxist, or cumulative constipation may be present. Third, the type of constipation must be determined, and it is customary to divide the



cases into atonic, catarrhal, and spastic, although the latter two frequently represent the advanced stage of the atonic form. The treatment, especially dietetic, varies according to the stage of the disease. It should be obvious to all then, that no case of constipation can be properly managed, unless one ferrets out in each individual the various etiologic factors which combine to produce the pathologic physiology present.

Preventive treatment must begin in childhood, and all children should be taught in the home and public schools the proper bowel hygiene, the dangers of neglecting nature's call, the importance of diet, and the hazards of cathartics. The medical profession should disseminate information regarding the physiology of the intestinal tract, etiology of constipation, and dangers of self medication and diagnosis.

The management of the individual case requires time, patience, and the full confidence and co-operation of the patient. A complete history is of utmost importance, but what the patient says about his bowels is not so important as the consideration of his personality, habits of eating, diet, water intake, frequency and kind of cathartics, exercise and rest. Is the patient the worrisome, tense, apprehensive, impatient type, who easily becomes saturated with fear, or is he the hypotonic lethargic type, who is neglectful, perhaps ignorant, and not inclined to recognize or respond to natural reflexes? Has the patient ever waited a few days for a physiologic bowel movement or does he take cathartics out of fear that the bowels will not move?

A complete physical examination should not be neglected for several reasons. Organic disease of the bowel, and constitutional disease must be eliminated as a cause. Physics should not be taken for at least twenty-four hours before the examination. An x-ray examination will determine whether the stasis is ileocecal, colonic, or rectal. It should be kept in mind that food residue should normally pass through the intestinal tract in from twenty-four hours to seventy-two hours. If an x-ray examination cannot be made, the charcoal and carmine tests are of some practical value. Rectal examination will frequently reveal the rectum filled and dilated with feces, and the condition known as dyschesia can be diagnosed. This is a very common form of constipation, and usually results from habitually ignoring the defecation reflex. Many times an examination will determine that the entire intestinal tract is normal, and the bowel has not been given a chance to function physiologically.

The stool should be carefully investigated in all

cases, noting particularly its size, and shape, the bulk, the presence of mucus, blood and pus, the state of digestion of food, evidence of dehydration and the reaction. Abnormal acidity indicates excessive fermentation, and abnormal alkalinity excessive putrefaction.

The treatment of the patient himself should begin with psychotherapy. All fixed ideas and fears which in themselves inhibit intestinal action must be eradicated, and the absolute confidence of the patient obtained. The normal physiology of the bowel must be thoroughly explained, always including the important fact that the volume, frequency, consistency, and character of the bowel movements depend directly on the amount of food taken, the proportion of residue present, and the size of the large intestine. In some, a bowel movement daily is normal, while in others a movement every second or third day is consistent with good health. All data available, including x-ray plates, should be thoroughly presented to the patient in order to dispel fear of cancer and obstruction.

The initial step in the treatment is to withdraw all cathartics and the first few days will be the trying period for the patient. The essentials in the treatment of functional colonic constipation are, education, diet, and regulation of habits. A definite routine must be established and followed day in and day out. The morning routine is most important. The patient must arise early enough to have plenty of time to follow out instructions. Exercise of the abdominal muscles by means of gymnastics, a cold bath or shower, and a glass or two of water before breakfast, all serve to bring into play the important gastrocolic reflex. This reflex is then responded to after breakfast. Ten minutes of concentrated effort at stool each morning is well spent, and in itself gradually re-establishes sensitivity to reflexes and has a definite persuasive effect on the lethargic colon or rectum. False modesty, inconvenient toilet facilities, lack of time, or laziness should never interfere with this important duty. The diet ordered must be individualized, and will depend entirely on whether the bowel is hypertonic or atonic. It must be remembered that the diet should produce sufficient residue to provide normal stimulation to peristalsis, but not so bulky and irritating as to cause colonic spasm. Many of the diet faddists are going to dangerous extremes in the use of bulk producing foods, particularly bran, and actually aggravating the condition they hope to relieve.

In treating the atonic bowel, the main consideration is to increase the quantity of vegetable foods especially those which contain a considerable amount of cellulose, organic acids, and sugar, for

in this way, both chemical and mechanical stimulation are provided. An increased amount of fat for the undernourished individual is valuable. This would include practically all green vegetables, especially cabbage, spinach, lettuce, asparagus, onions, tomatoes, parsnips, watercress, and celery; also fruits raw and stewed, such as oranges, grapefruit, melons, and especially figs, dates, prunes, because of the large quantity of cellulose and sugar they contain. Plums, cherries, peaches, currants, gooseberries, pears, apples, grapes, and pineapple are also valuable. Jams and marmalade are of service because they tend to produce acid stools which are stimulating to the bowel. Whole wheat bread is valuable for its Vitamin B and roughage.

Patients who have developed the spastic type of constipation, either as a result of the physic and enema habit or from neurogenic causes, will not do well on the above suggestions. Irritating foods increase the colonic spasm and digestive disturbance. These patients must be put on smooth diet with a relatively low residue, and the vegetables ordered should preferably be puréed and raw fruits and vegetables interdicted. Stewed fruits are frequently well taken. These people are the ones who require psychotherapy, nerve sedatives, tincture of Belladonna or atropine to allay spasm, and warm applications to the abdomen. Also, in this type of case a preliminary period of rest is often of value. They should forget their worries at meals, eat no large meals, take a light lunch between meals, and avoid excessively hot or cold beverages.

Exercise is important in practically all ambulatory cases. It strengthens the abdominal muscles, stimulates intestinal movements, and has a mental effect in diverting the patient's thoughts. The best forms are rowing, horseback riding, climbing hills and setting-up exercises.

Finally, we frequently have to deal with dyschesia in which the stasis is confined to the rectum and sigmoid. The chief indication in these cases is to re-educate the defecation reflex by means of mild enemas such as normal saline, small injections of glycerine or retention enemas of olive oil. By relieving the excessive accumulation in the rectum, the chronic dilatation will be gradually relieved and the bowels resume their normal tone. It is important to remedy rectal pathology, and in the female, pelvic pathology.

In most cases of constipation, it may be necessary for a short time at the beginning of treatment to administer mineral oil, agar, or both, or perhaps a bulk producer like psylla seeds. I have found saraka of definite value. An occasional non-

irritating enema in the beginning might also be indicated.

Cathartics should be reserved for the intractable cases, and the ideal purgative is one which produces a movement at the proper time, after breakfast, causes no pain, and the minimum amount of irritation to the mucous membrane of the intestine. They are always indicated in incurable disease and the constipation of senility, in which cases they do less harm than too much roughage. I prefer cascara, aloes, or senna.

I should like to summarize as follows:

1. The treatment of constipation should begin in childhood with the proper education of children.
2. The adult public should be familiarized with the normal physiology of the intestinal tract, the dangers of physics and enemas, the importance of a proper diet, the necessity of proper bowel hygiene, and the dangers of neglect.
3. Each case of constipation should be studied in detail, all etiologic factors properly evaluated and treatment instituted according to the individual indications.
4. The important considerations in every case are education, diet, regulation of habits, and psychotherapy.

I sincerely believe that if every constipated patient received the type of attention which I have attempted to outline, many patients would come to the conclusion that the days of miracles have not passed.

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#### ACUTE STAPHYLOCOCCIC KIDNEY\*

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An interesting type of urinary tract disease is that of cortical infection of the kidney due to the staphylococcus. This infection, hematogenous in origin, has received little attention in textbooks on urology although it was described by Albarran in 1889. That the staphylococcus is a common in-

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fecting organism in kidney infections is proved by the work of Young, who found it present in 49 per cent of 356 cases studied. Others have reported percentages from 20 to 30 per cent. Nesbit<sup>1</sup> reviewed 48 cases on his service at the University of Michigan and stressed the fact that these cases tend to run a stormy course, but usually are self limited and do not demand surgical intervention, unless complicated by the formation of a true carbuncle or a perinephric abscess. Acute staphylococcic infection of the kidney is always secondary. Most common causes are furuncle, carbuncle, paronychia, tonsil infection or abscessed teeth.

*Pathology.* Briefly the pathology is as follows: the kidney is discolored, edematous and may be enlarged. There may be small areas of suppuration, these being scattered throughout the cortex. More extensive suppuration may occur with the formation of a carbuncle. The infection may extend through the renal capsule with the production of a perinephric abscess. Infection rarely involves the medullary zone while the pelvis is never involved. In the milder cases there is complete resolution with fibrosis.

*Symptoms.* Usually the initial symptoms are pain, chill and fever. The patient is quite ill. The pain may be moderate or it may be so severe as to suggest a renal colic. It may be confined to the kidney area or it may radiate. Usually there is abdominal pain in the upper quadrant of the side involved and it may also be present in the lower quadrant. In two cases, the patients complained of pain along the urethra. Urinary frequency may be present although the urinalysis is negative. The temperature at the outset may be as high as 105 degrees. Leukocytosis is always present and is usually quite high.

*Physical findings.* There is marked tenderness in the loin and flank with rigidity of the lumbar muscles. Pain on deep pressure may be elicited in the abdomen and this being present on the right side may lead to a mistaken diagnosis of cholecystitis or appendicitis. Even after the first severe symptoms abate the pain persists and the tenderness remains.

*Urine.* There may be gross hematuria at the outset. Nesbit noted this in eight cases although the urine was entirely negative. In our cases there was one of gross hematuria and one case showed a few red blood cells. Usually the urine is entirely negative to ordinary examination. Persistent search of the urine usually discloses staphylococci in the stained centrifuged specimen. Culture of the urine is disappointing even where the organism is demonstrated in the urine. Her-

rold and Ewert<sup>2</sup> advise incubation of the urine prior to making the culture as an aid in the isolation of the staphylococcus. Later there may be colon bacilli present in the urine. Pus cells may be found in the urine but not in a sufficient number to indicate a marked pyelitis.

*Diagnosis.* The acute onset with chill, fever, pain, pronounced leukocytosis and negative urine is strongly suggestive of staphylococcic kidney. The finding of staphylococci in the stained centrifuged specimen or a positive culture is a marked diagnostic aid. The rigidity and tenderness of the lumbar muscles and the elicitation of marked pain on deep percussion over the kidney serve to clear the diagnostic picture.

X-ray discloses no stone shadow and may show an enlargement of the affected kidney.

Urologic study may be entirely negative although the dye function of the affected side is diminished. Mathé<sup>3</sup> calls attention to the fact that in cortical infection there is a lack of mobility of the affected kidney as demonstrated by a pyelogram made with the patient in the standing position.

*Progress.* Although the early course is stormy, the acute symptoms usually subside but the temperature and tenderness persist for an indefinite period. Nesbit reports one case of 120 days. Our longest case remained in the hospital 68 days, and the patient was seen many times at the office for indefinite pain, but he ultimately made a complete recovery. It is difficult to refrain from exploring the kidney. This was done on two of our cases although the findings did not justify the surgical procedure. Many of these patients undoubtedly are subjected to nephrectomies when recovery under conservative measures would take place. It is our custom to make frequent examinations and to watch the urine daily. If the complication of carbuncle or perinephric abscess occurs, surgery must be resorted to. An interesting observation has been that of alleviation of the pain following catheterization of the ureter. I cannot explain this for there has been no apparent influence on the course of the disease.

*Treatment.* In the six cases reported here treatment has not seemed of much avail. Rest in bed, salicylates for pain, and heat or cold to the kidney region seem to do as well as anything. Neoarsphenamine has been tried as has intravenous hydrochloric acid with no apparent benefit. Diathermy seems to improve the pain but otherwise has not been of value. If symptoms of severe infection appear resort must be made promptly to surgery.

## CONCLUSIONS

1. Staphylococcic kidney is common and should be looked for in every case of renal pain not otherwise accounted for.
2. The condition has a tendency to be self limited.
3. Only complications should be treated surgically.
4. The treatment should be conservative with watchful waiting.

## CASE REPORTS

Case 1. The patient, a male, twenty-one years of age, a clerk, entered the hospital on March 12, 1930, complaining of pain in the left kidney region, nausea, vomiting, chills and fever of three days' duration. Cystoscopy had been performed one year previously for a rather obstinate cystitis. He had had the usual childhood diseases, but denied any venereal history. A physical examination disclosed tenderness in the upper left quadrant and very marked tenderness over the left kidney with rigidity of the lumbar muscles. Laboratory findings were as follows: urine, clear, yellow, acid, specific gravity, 1.027, no albumin, and no sugar; a few epithelial cells and oxalate crystals; white blood count was 16,050, with 77 per cent polymorphonuclears. Cystoscopy at the time of admission to the hospital was negative. The left ureter was easily catheterized, and the findings were normal. A pyelogram showed some narrowing of the calices. Our diagnosis was a surgical kidney, probably with a perinephritic abscess. The left kidney was explored, and many fine adhesions around the kidney with an exudate of clear fluid were found. The kidney seemed swollen and discolored. It was needled in several places, but no pus was found. The wound was closed with proper drainage. The patient slowly improved, but a high temperature persisted, as did the leukocytosis. During the convalescence we secured a positive Wassermann reaction, but anti-leptic treatment did not influence the course. He was discharged from the hospital twenty-seven days after the operation with a slight wound drainage, and still carrying a slight daily temperature. Ultimately he became entirely well. This was an early case, and in the light of present knowledge search would have been made for staphylococci, and the operation would not have been performed.

Case 2. Mrs. W. C., a widow, twenty-five years of age, entered the hospital March 13, 1931, complaining of pain in the left upper quadrant and left loin of five days' duration. She had had a

severe attack of sinusitis with nasal bleeding, and several weeks before admission, had a boil on the right arm. A physical examination revealed an ill appearing young woman, who complained of severe pain in the upper left quadrant and in the left loin. There was marked tenderness and definite rigidity over the left kidney. Her temperature varied from 100 to 102.8 degrees. The white blood count was 19,000, with 90 per cent polymorphonuclear leukocytes. The urine was negative. The condition was diagnosed as a perinephric abscess. The usual left kidney incision, carried down to the kidney, was performed March 16. No perinephritic abscess was found, but there was some flocculent material around the kidney, which appeared swollen and darker than normal. No areas of fluctuation were found in the kidney, but because of the possibility of a cortical abscess the kidney was needled in several places. No pus was found, and a gauze pack was placed against the kidney, and the wound closed by layers. The temperature persisted for several days after the operation, but gradually declined, while the white blood count rapidly diminished. The pack was removed on the second day. There was considerable serous drainage, and on the fourth day, a moderate amount of purulent drainage. The patient left the hospital in good condition on April 5. This was undoubtedly a staphylococcic kidney. A follow-up urologic examination made April 28, 1931, showed a normally functioning and appearing kidney. The patient has remained well to date.

Case 3. The patient, a farmer, sixty-four years of age, entered the hospital September 3, 1931, complaining of pain in the upper left quadrant of the abdomen, left loin, and at the urethral meatus. It had been present for two weeks, and at the same time he had noticed weakness and shortness of breath. He had always been in good condition and health, but had had some urinary difficulty for one and one-half years. The physical examination revealed a tall slender man, who appeared very ill. His blood pressure was 130/75. There was marked rigidity and tenderness in the left loin and over the left upper quadrant, where a mass about the size of an orange could be felt. Urinalysis showed a specific gravity of 1.018, cloudy neutral reaction, albumin, one plus, no sugar, and many pus cells. A stained centrifuged smear showed colon bacilli. On September 3, the day of admission, the white blood count was 10,000, with 78 per cent polymorphonuclears. These findings remained about stationary, and on September 15, the white blood count was 15,000. Tenderness, pain, and temperature remained the



same. The phenolsulphonphthalein test was given intramuscularly, and 50 per cent was returned in two hours. On September 20, a cystoscopy was performed, and the prostate gland was found to be moderately enlarged. The bladder was somewhat trabeculated with a reddened wall. The ureteral orifices were easily visualized, and each ureter was catheterized with No. 6 catheters. Specimens were collected, and those from the right kidney proved to be negative, while those from the left kidney showed six white blood cells on a high power centrifuged field. Colon bacilli and staphylococci were present. The appearance time for the phenolsulphonphthalein test was six minutes for the left kidney and nine minutes for the right kidney. X-rays showed both kidneys to be larger than normal, with the left slightly larger than the right. A pyelogram of the left kidney disclosed an elongated narrow pelvis and calices. A diagnosis of a left perinephritic abscess was made, and an exploration of the left kidney was advised.

On September 18, under gas anesthesia, a small longitudinal incision was made over the left kidney. The finger was introduced and the cavities broken up with the finger, allowing clear fluid to escape. Proper drainage instituted. The patient did not improve and on September 30, another cystoscopic examination was done to check the function of the right kidney. The urine of this kidney was negative, and the appearance time of the phenolsulphonphthalein test was six minutes with good concentration. On October 2, a nephrectomy was performed, and many cavities were found in the kidney, some having been drained at the first operation, while others contained clear fluid. At the lower portion a necrotic yellow mass was found, this being a carbuncle. The patient seemed better for a few days, after which he suffered a relapse and died on October 9. Autopsy disclosed a polycystic right kidney, with death due to renal insufficiency.

Case 4. A boy, ten years of age, was first seen October 14, 1931, complaining of pain in the right side of the abdomen and over the right kidney. Pain was referred down along the urethra. There was marked tenderness over the right lower quadrant and right loin, and it was believed that the condition was a right kidney infection rather than appendicitis. The x-ray showed several small shadows which might have been in the right ureter. The right kidney was one-half inch broader than the left kidney. A diagnosis was made of a right staphylococcic kidney, but the surgical consultant advised an appendectomy. The urinalysis

was negative except for two plus acetone, and one plus diacetic acid. On admission the white blood count was 18,200, with 69 per cent polymorphonuclears. An appendectomy was performed October 15, and the appendix was found to be discolored, but without enough pathology to account for the symptoms. White blood counts on October 21 and 24, and November 15, were respectively; 16,750; 15,200; and 11,500. The urine remained negative until October 22, when a few pus cells were noticed. Three transfusions were given; the patient gradually improved and left the hospital on December 21.

Case 5. A nun, fifty-five years of age, was admitted to the hospital March 13, 1935, complaining of pain in the lower lumbar region, cramps in the abdomen, and a continuous ache in the left upper quadrant and the epigastrium. During the three days before admission, she had had a watery diarrhea. The patient was an acutely ill individual whose general examination was negative except for some abdominal tenderness and marked tenderness in the upper left quadrant and in the left loin. There was marked rigidity of the left lumbar muscles. The temperature was 103.4 degrees; pulse, 90; and respirations, 24. The urine was cloudy and alkaline, with a specific gravity of 1.010, no albumin, no sugar, and negative microscopically. The red blood count was 4,550,000; hemoglobin, 80 per cent; white blood count, 18,000 with 80 per cent polymorphonuclears. On March 15, a catheterized specimen of urine showed three white blood cells and five to seven red blood cells, on a high power uncentrifuged field. No bacteria were found. Acute symptoms subsided, but the temperature continued above normal. On March 18 she complained of pain in the vicinity of the right ankle, and an examination showed a diffused reddened edematous area. On March 26 there was evidence of suppuration in this area, and it was incised and drained. A culture of this pus showed staphylococci. On April 4 the urine culture was positive for staphylococci. On May 1, the urine showed a few red blood cells, and six to eight white cells on a high power field. An intravenous urogram showed a slightly enlarged left kidney, but was otherwise negative. The leukocyte count was now 6,200. The daily temperature stayed around 100 degrees, and the kidney was still somewhat tender. Staphylococci are still present in the urine, at the time this paper is being prepared.

Case 6. Male, fifty-one years of age, an elevator employee, entered the hospital September 23, 1934, complaining of pain in the right side of the

abdomen and the right loin, nausea and vomiting, chill, and fever of three days' duration. He had noticed that the urine was bloody. History was negative for previous trouble. The physical examination was generally negative, but there was marked tenderness over the right side of the abdomen and in the right loin, and there was a palpable mass in the upper right quadrant. His temperature was 102.6 degrees, and the white blood count was 18,000. A urologic study at this time was negative. An operation performed on September 25, disclosed a markedly distended gallbladder with a few stones. A cholecystostomy was done. While the tube drained well, the patient's condition did not improve particularly, and he continued to have an elevated temperature and leukocytosis. He also complained of pain in the right kidney region. He was given another thorough examination on November 19, at which time there was considerable tenderness still present in the right loin and the upper right quadrant. The temperature was elevated, and the white blood count was 26,000. On deep palpation a mass, probably a kidney, could be felt in the upper right quadrant. Cystoscopy showed a somewhat reddened bladder; No. 6 catheters passed easily to each kidney. Specimens were collected, urine from the right kidney being pale in color, while that from the left was amber. Both specimens contained a few pus cells. The appearance time of the phenolsulphonphthalein test was seven minutes in the left kidney, and eleven minutes in the right. Concentration was poor. An x-ray showed both kidneys larger than normal. He improved following the cystoscopy, and on November 28 he had a normal temperature. While the right kidney was palpable, it was not particularly tender. A stained specimen of urine disclosed staphylococci in the right kidney. The diagnosis of a right staphylococcic kidney was made, and the patient left the hospital on December 1. He did not feel well after leaving the hospital, and in January consulted an Omaha surgeon who advised cholecystectomy. This was done, and at the same time an inflamed suppurative appendix, adherent posteriorly to the right ureter, was removed. After this operation, he made an uneventful recovery.

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## CONGENITAL ABSENCE OF ONE KIDNEY\*

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The presence of only one kidney in the human body seems to be one of Nature's experiments. The efficiency of this one kidney is often very remarkable. Even so, such a condition is sooner or later a calamity to the individual, and, all too frequently a source of embarrassment and distress to the surgeon as well. A study of the cases of congenital absence of the kidney reported in the literature reveals that it occurs too often to be ignored and that the possibility of its occurrence should always be borne in mind by the physician. It should never be considered simply as a rare anomaly because it often may be an every day fact in an active practice.

The earliest writers of medical knowledge, particularly Vesalius, Eustachius, and Aristotle describe this condition. The first description of this anomaly available in the more recent literature was written by Consiliorum in 1609. Morgagni in 1769 was the first to give us a classification of unsymmetrical kidney in which this anomaly was included. However, these early observers, as well as many of the more recent ones, did not distinguish between marked atrophy and a complete absence of one kidney.

Embryologically the complete absence of one kidney may be explained as an organic developmental defect. As you are well aware, the kidney has a two-fold origin, namely, from the metanephros and a diverticulum from the wolffian duct. The elements from one of these sources become arrested in their natural development producing this anomalous condition. Therefore the anomaly may date back to a very early period in the development of the embryo. The metanephros gives rise to the secretory portion of the kidney. One end spreads out and forms the glomerulus. The other becomes the convoluted and the straight tubules, the loop of Henle, and the connecting tubules. The connecting tubules empty into the collecting tubules which are simply terminal subdivisions of the diverticulum from the wolffian duct. This has in the meantime grown dorsalward. In so doing it has formed the ureter, the pelvis of the kidney, and the calyces. The above mentioned collecting tubules arise from the calyces. It is quite conceivable that arrest in the development may occur at any stage in this developmental process. In view of this fact it is evident that a cursory examination should never be

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relied upon as a basis for diagnosis of renal genesis. The organs of the female genital tract arise from the müllerian duct. This develops later in uterine life than the wolffian duct. The chance of malformation of the female genitalia is therefore greater than in the case of the male genitalia which arise from the wolffian duct and have, in most cases, originated prior to any "slip" in the genesis. This developmental fact is well borne out in the statistics of present day literature. So definite is this embryologic relationship that the finding of any anomaly of the female genitalia should make a thorough examination of the urinary tract imperative.

The cortical portion of the adrenal gland has its origin from the wolffian duct, while the medullary portion is derived from the sympathetic nervous system. It is quite evident therefore that if the former may not materialize, the latter may likewise be absent. Hence the absence of this gland in a case showing complete agenesis of the wolffian body is assured.

In such conditions the solitary kidney undergoes a compensatory hypertrophy. It is not unusual to find these organs twice the normal size. However, these overworked organs will early become weakened the same as any structure under similar stress and strain. This leads to a high incidence of disease in this solitary kidney. Obviously an early diagnosis of this condition is of inestimable value to the patient and a source of great satisfaction to the physician as well.

Collins reviewed this subject thoroughly in 1932. Including his own and those found in the literature he reported 581 proved cases. His report shows one such case in each 920 autopsies; 48.36 per cent were males and 39.75 per cent were females. The sex was not stated in the remaining cases. The left kidney was absent in 54.73 per cent of the cases and the right in 40.96 per cent. The average age of these patients was 44.40 years for the males and 36.60 years for the females; 30.8 per cent of the solitary kidneys considered in his review were diseased. In 20.8 per cent of the cases no mention was made regarding this factor. In studying the literature one is impressed by the fact that the earliest cases were diagnosed solely at the autopsy table. Later these were found interspersed by cases diagnosed at the surgical table. The recent cases reported are chiefly those diagnosed by cystoscopic procedures. This gives us a very good cross-section of the medical progress that has been made during this period and in which the urologist may justly claim a major portion.

Since Collins' report McNally has collected from the literature eleven additional cases of

proved unilateral renal agenesis. Eleven cases have been found since his report bringing the total number of reported cases in the literature to 603.

The positive diagnosis of congenital absence of one kidney is frequently very difficult to make. Very often the urologist's skill is taxed to the utmost. The following case clearly demonstrates this fact. A previous x-ray examination had disclosed a right renal calculus. She was cystoscoped and catheters easily passed a distance of 28 centimeters up each ureter. There was a regular flow from each catheter until the cystoscope was removed and the bladder emptied. When this was done the flow from the left catheter stopped completely. There was no function from this left kidney as demonstrated by the phenolsulphonphthalein test. Pyclography showed a left ureterogram only. Later a catheter was again passed up the left ureter and the bladder then filled with a methylene blue solution. The methylene blue immediately appeared from the catheter up the left ureter and clearly proved that reflux was present at the first examination. Later the ureteral orifice was tightly obstructed by a bulb catheter and a pyelogram was attempted, using moderate pressure. No renal pelvis was demonstrated. Just when the diagnosis of congenital absence seemed most certain, a catheter slipped around an evident ureteral kink and entered a 40 c.c. pelvis of an atrophic kidney. It would not seem at all possible to prove the complete absence of a kidney solely by means of intravenous pyelography. Therefore, it is obvious that in making this diagnosis one must cautiously rule out primarily the presence of the following: an atrophic kidney, an ectopic orifice, a stenosed ureter, or even a ureteral kink as was demonstrated in the above case.

The following case is presented because it is of interest both from the point of view of congenital absence of one kidney and also the duration of anuria before toxic symptoms became manifest.

H. M. B., a white male, fifty-seven years of age was admitted to the Presbyterian Hospital on September 22, 1934, with the following history. On September 16, 1934, he had had an attack of vomiting. This was not projectile, but a severe headache followed this and lasted for about five hours. The patient considered this a "gastric upset" and stated he "took a lot of soda water" for it. He also took a saline laxative and the following day he felt much better. However, he stated that he had passed but a small amount of bloody urine on September 17, 1934, and none thereafter. He consulted a doctor on September 20,

1934. He was unable to void at this time, his general appearance was good and he did not appear ill. His blood pressure was 200/110. He was hospitalized on September 22, 1934. At that time his blood pressure was found to be 190/120 and there was a slight amount of edema about the face. The blood picture at the time of admission showed 80 per cent hemoglobin, with 4,056,000 erthrocytes and 7,400 leukocytes. The differential count showed 89 per cent polymorphonuclears and 11 per cent mononuclears. He was afebrile during his entire stay in the hospital. On September 24 a blood chemistry showed 220 mgms. of nonprotein nitrogen, 103 mgms. of urea nitrogen and 10 mgms. of creatinine. This was checked with the same results. At no time was a urinalysis made because none was available. There was no bladder dulness suprapubically at any time and no renal tenderness. Kidneys were not palpable.

Treatment during his hospital stay consisted of hot packs, intravenous fluids, diuretics, etc., with no results. At no time did he complain of any particular discomfort and never had any desire to void. Outside of an increasing amount of edema which became generalized, and drowsiness, his general condition remained relatively unchanged until October 2, when he became delirious and rapidly passed into coma followed by death.

On September 28, 1934, the fundi had been examined with the following findings: vessels arteriosclerotic and tortuous, no swelling of nerve head, nerve head inflamed, pupils round and equal, both react to light and accomodation. The patient died on October 3, 1934, and autopsy, limited to the abdomen, was performed about six hours after death and after the body had been embalmed. On opening the abdomen a moderate amount of brown fluid was observed. No kidney was found in the right renal fossa. Careful search was made throughout the entire right side of the abdomen but no vestige of the kidney or adrenal gland could be found. The left kidney was found in its normal position, was enlarged about twice its normal size and weighed 242 grams. The kidney, bladder and ureter were removed intact. The bladder contained about 50 c.c. of a brown liquid but unfortunately this was not saved for examination. The specimen is shown in the accompanying picture. A small stone as shown in the picture was found tightly embedded in the upper calyx. It is totally inconceivable that this could be considered as a cause for postrenal anuria. The specimen clearly demonstrates the absence of the right ureter and right half of the trigone. The genitalia were normal. Pathologic section re-



vealed an acute exacerbation of a chronic nephritis.

CONCLUSIONS

- 1. A case of congenital absence of the right kidney is reported, verified by autopsy.
- 2. The congenital absence of a kidney is not a rare condition.
- 3. The diagnosis of this condition is beneficial to the patient even when there is no existent pathology.
- 4. Recognition of anomalies of the female genital tract is an indication for making a careful examination for a co-existing urinary tract anomaly.
- 5. Diagnosis of congenital absence of one kidney is a difficult procedure and is best accomplished with the combined aid of cystoscopic and x-ray facilities.

TABLE 1

Author	Sex	Age	Side	Diagnosis	Other Findings
Mintz & Stewart	M	38	L	Autopsy	Ureter and spleen absent
Peterman	M	8 mos.	L	Autopsy	
Herbst & Gatewood	M		L	Cystoscopy	Ureter absent
Roche	F	53	R	Cystoscopy & Autopsy	Ureter absent
Simon	F	34	R	Cystoscopy	Ureter absent
Kirkland	F	36	R	Cystoscopy & Autopsy	Ureter and adrenal gland absent
Hullsiek	M	49	L	Cystoscopy	Ureter absent
White	M	45	L	Cystoscopy Surgery & Autopsy	Ureter, adrenal gland, left seminal vesical, and vas, absent
Stewart	M	17	R	Autopsy	Left kidney removed five days before death — traumatic rupture
Souza	M	45	R	Autopsy	Kidney and ureter completely absent
McNally	M	28	R	Cystoscopy	Ureter, orifice and ureteric ridge absent

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## ADEQUATE RECORDS AND GENERAL OFFICE MANAGEMENT

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The subject of adequate records and general office management is one which concerns everyone in the practice of medicine and surgery. Whether or not we like the work and drudgery of maintaining adequate records, they are essential to the establishment and maintenance of a successful practice. There are many record systems available and each one has its advantages and disadvantages. The success of any one system depends on the diligence of the physician who uses it.

The case record consists of two parts, the professional record and the business record. The professional record includes identification data, name, age, sex, address, both business and residence, including telephone numbers, occupation, and referring physician. It may also include special data as salary or income of the patient, responsible relative, and credit rating if known. Following that should be the history of the case, complete or abbreviated as indicated, including at least the history of the present illness, and the progress or symptoms noted on subsequent visits. This is followed by the physical examination which should preferably be complete, giving full details of findings. In any case it should at least give all positive findings. Following the completion of the examination the impression or probable diagnoses should be given. Special laboratory procedures should then be recorded. These include urinalysis, blood analysis, sputum, Wassermann and Kahn test, x-ray reports, gastric analysis, etc. It is also well to record the treatment given or advised, with a copy of prescriptions or at least a notation of the prescriptions given.

A complete record of the case is essential in the understanding and treating of the patient. The patient appreciates a careful accurate history and is very favorably impressed by the physician's

thorough knowledge of his past history which is gained by the reading of his case record, before the patient comes into the office for a return visit. We are all pleased to be recognized and called by name by an efficient clerk or waiter and so is the patient favorably impressed by our remembering the symptoms or treatment he had some time ago. We find a complete record a great help in the handling of treatment but more especially is it important from a medico-legal angle. A complete record of the patient is practically the physician's only protection in case of a malpractice suit, and in fracture cases should always include x-ray films taken before and after reduction. No testimony is as valuable before a jury as that taken from a complete case record made at the time of the original examination and treatment.

The business record should include date, time, type of service such as house call, day or night, office call, or hospital visit. It should also include a description of the condition present at that time. If an injury, the location, extent, and treatment given should be noted. Notation of any treatment refused should be made. The amount of the charge for the service should be listed as to credit, cash, or simple payment on account. It is very essential to have a system of records which maintains at all times the present balance of the account to date. This enables us to refer to and find at once the condition of the patient's account. The business record should include financial arrangements and the date of such an agreement, when the payments are to start and amounts of such payments, discounts offered for prompt payments, etc. Any subsequent changes in the original agreement such as a change in the installment payments should be made later. It is too easy to forget promises as to the amounts and time of payment unless a specific notation of them is made on the record.

The daily record may be simple or complex, depending on the extent of the practice, variety of cases seen, and type of practice. Under the heading of income the record should list first cash balance on hand from the previous day, then cases treated whether cash, charge or credit on account. Thus professional service accounts may be segregated as to whether from surgery, obstetrics, fractures, house or office calls, etc. In this way a check can be made to see how each portion of the practice pays out. Other incomes should also be entered in the daily record such as rents, dividends, interest, etc. The expenses should be listed and also bank deposits. The addition of the balance on hand from the previous day plus the income of the present day, less expenses including the bank deposit should total cash on hand for the present

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day. A check up daily in this way should prevent errors such as a failure to credit accounts when paid. Such errors are preventable and when made are very difficult to explain satisfactorily.

A tickler system properly used can and does pay very well for the time and effort expended in making and keeping it up to date. Cases may be listed on cards and the case and specific information filed according to date. For example, a statement of an account is sent on December 1. A card is then placed in the January 1 section as a reminder to send another statement on this date. Again if a diphtheria immunization is given on January 1, a card is filed for June 1 or July 1 for the Schick test, giving the patient's name and specific information regarding diphtheria immunization and Schick test. This tickler system is also a big help in the follow up care of surgery and fractures as well as in the conducting of the general office practice. The patient appreciates an inquiry as to his health and progress as indicating a personal interest of the physician in the patient.

Everyone has his own ledger system made according to his individual needs. An adequate system should include all book accounts and the names of those for whom the services were rendered. These accounts should include charges, with date when posted, and payments on account and the present balance. Balanced accounts enable the physician and his assistant to refer to them quickly and obtain the balance on any account whenever this balance may be needed.

The ledger system should also include daily, monthly and yearly records of the business done and as to whether it was cash, credit, or credit on account. Inspection and comparison of these data from time to time give an accurate estimation of progress or lack of progress made. From these data the percentage of collection is easily and rapidly obtainable. I might add that too high a percentage of collections will usually mean a drop in total business in time and a low percentage of collections usually indicates lack of effort in collecting. Other income is given such as personal receipts, interest, dividends, rent, and miscellaneous income. Expenses are listed as rent, salaries, office supplies, auto expenses, medical and surgical supplies, drugs, equipment and doctor's drawing account. These are listed month by month and comparisons made with past expenses. If the driving account is climbing without cause one should get a different and a more economical car, or if office supplies are too high, certain leaks may possibly be found and corrected. An analysis of the expenses from time to time may make possible many worthwhile savings and raise the percentage of the net

income as compared with the gross income. It is just as important to know where the money goes as it is to know from where it comes.

The purpose of a filing system is to keep conveniently, material that is needed. Records and correspondence should be systematically filed for protection and to be available when wanted. Records are filed in two groups. Active cases should be filed where the information will be readily available. The non-active cases should be filed separately and frequent changes made from these files as needed. When the treatment is completed and paid, the records are filed directly. If unpaid, the balance is transferred to the ledger and is then filed. (A file of confinement cases pending and the approximate date expected is a help for ready reference.)

An alphabetical index of diseases and operations is a very valuable addition to the physician's records. It is particularly valuable for scientific and research purposes and a review of cases and the results of same. In the average cases, the opinions regarding a patient change with the course of the disease until at the end, the final concept may be entirely different from the original. The record gives this sequence of changes and many errors in diagnosis and technic will be clearly presented if an accurate record has been kept. A complete record is the graphic expression of the physician's attempt to study and treat the patient in an adequate and satisfactory manner. The more careful this study the more complete the record will be. Adequate records are the physician's help and the patient's protection.

A letter file is indispensable. This includes letters received which allows a check up on cases being treated. These letters are available for reference in corresponding with consultant or referring physician as the case may be. It also includes copies of the physician's correspondence of any importance—mainly important from the medico-legal angle.

In the filing system, an alphabetical index of diseases is very useful. This would include the disease, a short resumé of diagnostic points, the main essentials of treatment, and the prescriptions used with directions for giving or applying same. This may be filed in an ordinary card index system and is a time saving device in the treatment of many conditions. How often do we want a prescription for a certain skin infection or disease and cannot recall the exact formula? It is very easy to obtain it from our card index. I might add that the effect on the patient is much better than if the doctor consults a reference book.

For a more thorough discussion and analysis of



the latest advances in treatments, operations and diseases a letter-sized alphabetical index serves very well. In this, complete data on medical subjects on which one has made or desires to make a special study, may be filed for reference. Examples of this are small monographs and material from consulting services of the various medical and surgical systems such as Tice, Nelson, Oxford, etc. When properly filed this material is always available for future reference. Adequate office records consisting of case records, and daily records used, can and should contribute much to the success in the practice of medicine and surgery. No one system of record keeping can satisfy the needs of all physicians but any physician who tries, will find that adequate records pay.

Under office management come all details of the association of the physician and his assistants with the patient. An office to be well managed should have at least one capable assistant. It should be well located, have adequate space or room and should be clean and neat. Furnishings should be in good condition and taste. Equipment should be adequate for the conduct of an extensive and varied office practice, and all equipment which is antiquated or obsolete should be replaced when the period of usefulness is passed. We in general practice must have the latest and most efficient equipment if we are to treat satisfactorily these patients, who would of necessity otherwise be referred to the clinic or the specialist.

A large portion of the doctor's success or failure may be attributed to the professional assistant. She should keep the office clean, neat and orderly. She should be a good hostess, welcoming the patient on his or her arrival. She should be cheerful, sympathetic and ready to listen to the patient's story or complaints. She can secure much desirable information which possibly the patient would never tell the physician. She must use tact in presiding over the waiting room as well as over the telephone. Very often the telephone is the patient's first contact with the physician's office, and an intelligent and courteous response by a well trained assistant gives the patient a good first impression. Too much emphasis cannot be placed on the tactful answering of the telephone. The office assistant also must have charge of the treatment and examination room. She can and should save the physician much time in the examination and treatment of each patient.

Last but not least she is in charge of the record system and the collections. To her is entrusted the checking and filing of the records and all clerical work of bookkeeping. The posting of daily accounts, balancing of the day book, filing of rec-

ords, keeping of a complete and accurate ledger is the assistant's part in the maintenance of adequate records. To her care and judgment in the handling of them may be attributed a large share of the success or failure in the collecting of the physician's accounts. A good assistant is indispensable in good office management and the care of adequate records.

### CLINICAL NOTES FROM THE COLLEGE OF MEDICINE

#### PYOGENIC OSTEOMYELITIS OF THE VERTEBRAL SPINE

ERNST FREUND, M.D.

Department of Orthopedic Surgery  
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There is a considerable difference between the type of orthopedic material in great industrial centers and in rural regions, as for instance, the state of Iowa. Large orthopedic clinics in cities of Europe, or of the United States, admit a relatively enormous number of tuberculous skeletal lesions, so that clinical and roentgenologic finding of a destructive lesion of the spine leads one to consider tuberculosis first as the probable diagnosis. A quite different state of affairs prevails in the Orthopedic Department of the State University of Iowa, where among its great volume of material tuberculous lesions are relatively rare. Here, among the destructive inflammatory lesions of the skeleton, pyogenic lesions are of greatest importance from the standpoint of frequency. A very rough check-up of destructive spinal lesions due to inflammatory processes, observed during the last three years, reveals the very surprising fact that while there were sixty patients over ten years of age with Pott's disease, there were twenty-five patients with pyogenic osteomyelitis. If one considers that tuberculosis is in most instances a disease of early childhood, and that a great percentage of these sixty patients with tuberculous spinal lesions represent chronic cases resulting from a lesion in early childhood, one must admit that 50 per cent of the lesions of a destructive inflammatory character originating in the second, third or fourth decade of life are due to pyogenic osteomyelitis. Therefore, at least for the state of Iowa, one must consider pyogenic osteomyelitis of the spine first, in patients with acute onset of back pain and high fever, followed later by evidence of a destruction in the vertebral spine. The frequency of occurrence makes it advisable for

general practitioners to become better acquainted with the clinical picture of osteomyelitis of the spine. Once one considers the possibility, the diagnosis can easily be made. There is no doubt that with better knowledge of this pyogenic lesion of the vertebral spine the diagnosis will be made more often, and by adequate treatment it will be possible to decrease considerably the present relatively high mortality rate by early surgical intervention.

From the pathologic viewpoint osteomyelitis of the spine does not present any special feature. From the surgical viewpoint it acts somewhat differently from other osteomyelitic lesions, but this is due only to the localization of the inflammation. The infection in the vertebral segment may be either in the anterior part, i. e., the vertebral body, or in the posterior portion in the neural arches and processes. It is easily understood that the vertebral body, with rare exceptions, cannot be attacked surgically; however, the posterior localization can easily be reached from behind. It is thus possible to eradicate a focus in the posterior arches, whereas anterior lesions can only be the subject of surgical intervention insofar as they give rise to soft tissue abscesses necessitating drainage. The following four cases are presented to show different aspects of the clinical course of pyogenic osteomyelitis of the spine.

*Case 1.* A nine year old boy was admitted because of stiffness and marked tenderness of the lumbar spine. The patient had been bedridden for two months. He had developed an acute onset of back pain with high fever and meningeal symptoms, and a diagnosis of meningococcus meningitis was made. He was kept in the hospital for one month, and numerous lumbar punctures were performed, but meningococci were never isolated although occasionally staphylococci, considered as a contamination, were present in the culture. The patient recovered from his acute illness but continued to complain of pain and stiffness of the spine. This had been explained by the frequent lumbar punctures which can account for temporary stiffness and back pain. Upon insistence of the patient's mother a roentgenogram was made and revealed a destructive lesion of the third and fourth lumbar vertebrae with erosion along the narrow intervertebral space and considerable osteosclerotic changes in the affected vertebral bodies. The presence of so marked an osteosclerosis developing within a relatively short period of time ruled out tuberculosis and suggested osteomyelitis, which can safely be accepted as a diagnosis if one considers retrospectively the clinical symptoms of the onset. It is very likely, there-

fore, that this patient was affected from the onset by osteomyelitis of the lumbar spine. The meningeal symptoms were due to the proximity of the bony lesion to the meninges.

Meningeal symptoms in patients with acute osteomyelitis of the spine are common and represent a very severe complication. It is recognized that whereas the mortality rate in patients with acute pyogenic osteomyelitis of the spine is about 40 per cent, those who present meningeal involvement have a mortality rate of 60 per cent. The meningeal signs may be due simply to meningismus, a collateral inflammatory reaction of the meninges with absence of pyogenic organisms in the cerebral spinal fluid, or may be a true meningitis with staphylococci in the fluid after extension of the infection into the subarachnoid spaces.

*Case 2.* An eighteen year old boy, who was perfectly well eight weeks before admission to the hospital, had acquired an acute onset of pain in the back without preceding illness or infection. The pain began following a chill and the patient was confined to bed with fever, loss of weight and marked tenderness of the lumbar spine. On physical examination, the lumbar spine was very stiff with some gibbous formation at the level of the second lumbar vertebra, the white blood count was 11,050, and the tuberculin test was faintly positive. Roentgenologically there was only a slight narrowing of the intervertebral space between the second and third lumbar vertebrae. A diagnosis of acute osteomyelitis of the spine was made and the patient was first placed on a frame and later immobilized in a plaster cast. Roentgen check-ups four and six months after onset showed some erosion of the second and third vertebral bodies with definite narrowing of the joint space and beginning fusion of these two vertebral bodies by considerable periosteal bone production.

Both these patients showed very rapid recovery without surgical intervention. It is most likely that a perivertebral abscess had formed in both instances but did not enlarge so as to necessitate surgical drainage. Under conservative treatment very good results and probably permanent cure can be expected. In patients in whom the acute osteomyelitis of the spine heals without drainage and with solid fusion of the two involved segments, recovery is possible practically without any functional impairment. Patients in whom sinuses form either after spontaneous rupture or following surgical incision, resemble in many respects patients with chronic osteomyelitis in other regions of the body with the constant danger of flare-up and sepsis.

*Case 3.* A seventeen year old boy developed an



illness with chills and fever, following a fall from a horse. He was unable to sleep at night, showed a septic temperature, acquired intolerable pain in the back and was admitted to the hospital as an emergency case. The temperature was 102 to 103 degrees, and the white blood count was 32,000. There was moderate rigidity of the abdominal wall and exquisite tenderness over the dorsolumbar region. Roentgenologically there was a suggestion of narrowing of the intervertebral space between the twelfth dorsal and the first lumbar vertebrae. A diagnosis of acute osteomyelitis of the dorsolumbar region with psoas abscess was made and drainage of the psoas muscles on the right side performed from behind, resulting in the opening of a huge abscess cavity. The patient's condition improved remarkably following drainage. His temperature dropped to normal and his white blood count dropped to 12,000 so that it was possible to send him home on a Bradford frame.

It is usually considered that lesions of the posterior portion of the vertebral spine represent the milder forms of osteomyelitis, but this has not been found to be so in the material of the Orthopedic Department. This may probably be accounted for by the fact that most of our patients have become chronically ill by the time of admission, and thus are those who have escaped immediate mortality. The one patient with a posterior lesion presented here is the only one who succumbed.

*Case 4.* A thirty-nine year old man was admitted to the department of urology because of difficulty in passing urine. One week before admission, while unloading wood, he was seized by acute pain in the low lumbar region. Three weeks prior to the acute onset of back pain the patient had had a boil on the forearm with suppuration of the axillary lymph nodes. He had to quit working and was seen by a doctor who diagnosed the condition as lumbago. When admitted, the patient was severely ill with a fever of 102 to 103 degrees, a white blood count of 12,000, very marked pain in the back, and a distended abdomen. The lumbar spine was flat and stiff and there was exquisite tenderness over the left paralumbar region, where edema of the skin with deep fluctuation was noted. The swelling was aspirated and pus obtained. Roentgen examination was entirely negative. The clinical diagnosis of osteomyelitis of the lumbar spine was made and an emergency operation performed. Incision was made over the swelling over the left paralumbar region, a huge abscess was opened and erosion of the posterior arch of the fourth lumbar vertebra on the left side was found. The patient showed meningeal symp-

toms before the operation and these symptoms became aggravated after the operation. Other abscesses formed in the soft tissues and the patient died with a severe pyemia. Autopsy revealed a small bony focus in the posterior arch of the fourth lumbar vertebra with a peridural abscess extending upward and breaking into the pleural cavity, resulting in an empyema which caused death.

This patient could not have been saved despite early recognition of the lesion and very radical incision and drainage, because of the coëxisting sepsis and pyemia. It is of interest that the meningeal symptoms in this patient also were only collateral signs of inflammation. Two cysternal punctures showed markedly increased cell count but revealed no pyogenic organisms in the cerebral spinal fluid because the suppuration extended only in the epidural space.

As in other localization of acute pyogenic osteomyelitis, osteomyelitis of the spine requires a considerable length of time before it will give roentgenologic evidence of itself. At least six weeks must elapse before some changes are noticeable, and the first of these is usually narrowing of the intervertebral space. In the subacute and chronic stages the large amount of bone production resulting in osteosclerosis and early fusion renders the roentgenologic differential diagnosis between osteomyelitis and tuberculosis fairly simple. Staphylococcal infection in a very short time usually gives rise to much new bone, periosteal and endosteal in nature, such as is hardly ever seen in tuberculous lesions, for which the long-lasting, increasing osteoporosis is so highly characteristic. Therefore, in more advanced stages the roentgenologic picture may be of great help in determining the diagnosis and influencing the prognosis and form of treatment.

#### THE FINLEY HOSPITAL CLINICOPATHOLOGIC CONFERENCES

##### CARCINOMA OF THE COLON

F. P. McNAMARA, M.D., Dubuque

At the present time the curability of certain types of cancer is being emphasized. The hope of cure in all forms of malignancy depends upon early diagnosis and effective treatment. This is especially true of carcinoma of the large bowel in which the percentage of cures is relatively high if the condition is recognized before metastasis has occurred, and if the neoplasm is entirely eradicated.

cated by surgical means. Undoubtedly, the late diagnosis of some cancers of the colon is due to the failure of middle-aged patients with vague intestinal symptoms to seek early medical advice. On the other hand the medical profession must assume a certain degree of responsibility because of failure to appreciate the necessity of making an exact diagnosis in this type of patient. The case to be reported is important because it illustrates these very points.

#### CASE REPORT

The patient, a white man, fifty-seven years of age, was first seen outside the hospital two months before death. At that time he gave a history of gradually increasing constipation, and presented

colon were dilated and congested. A mass was found at the hepatic flexure causing obstruction. The appendix was thickened and red. The ileum was bisected three inches proximal to the cecum. Both ends were closed and invaginated. A lateral anastomosis was made between the ileum and the colon distal to the growth. The appendix was removed, and the wound closed with provision for drainage.

*Postoperative course:* The patient failed rapidly in spite of blood transfusions and other supportive measures, and died on the fourth day in the hospital.



Fig. 1. Photograph of the museum specimen showing annular carcinoma of the colon with proximal dilatation of the cecum.

the signs of intestinal obstruction. He was relieved by enemas. A blood examination showed red blood count, 3,890,000; hemoglobin, 47 per cent; color index, 0.61. Examination of the feces showed a strong chemical test for blood. An x-ray examination was made and was said to be negative, except for numerous kinks in the appendix. He was admitted to The Finley Hospital December 24, 1929, because of intestinal obstruction.

*Preoperative diagnosis:* Intestinal obstruction due to chronic appendicitis, with adhesions, or possibly due to a malignancy.

*Operative note:* The cecum and ascending

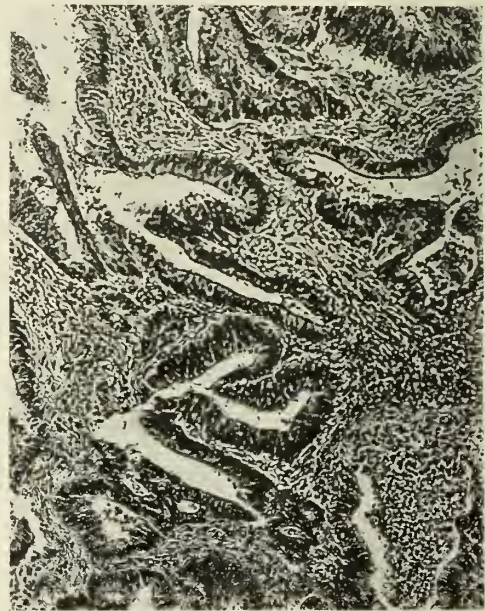


Fig. 2. Microphotograph of the tumor.

*Final clinical diagnosis:* Carcinoma of the hepatic flexure of the colon.

*Necropsy findings:* At necropsy an annular carcinoma approximately three centimeters in width was found at the hepatic flexure (Fig. 1). No metastases could be found, although a very careful search was made. Microscopically the sections of the tumor show typical adenocarcinoma estimated as grade 2, (Fig. 2).

#### COMMENT

Two months before his last illness this patient presented the signs and symptoms of intestinal obstruction which had been preceded by gradually increasing constipation. He was fifty-seven years of age; therefore, at the age when cancer of the colon is most likely to occur. The patient had a well marked secondary anemia and his stool showed a definite test for blood. The history gave no details as regards loss of weight and



strength, or information concerning indigestion. However, on the above signs and symptoms alone it became imperative to make an exact diagnosis. This was attempted but the x-ray examination was negative. Two months later the patient presented himself with a definite intestinal obstruction. Only at the exploratory operation was the carcinoma diagnosed. At the necropsy no metastases were found, therefore we would judge that the neoplasm was resectable. Undoubtedly a cure would have resulted if radical excision had been done. The failure to diagnose the tumor at the first x-ray examination was probably due to the

lence, distention, borborygmi, indigestion, loss of appetite, sense of fullness, and belching of gas, are also common symptoms indicative of the change in intestinal function. Obstruction may be complete for a day or more and then clear up completely only to recur at variable intervals.

3. Change in the character of the stools. The stools may contain considerable mucus and sometimes are described as being "slimy." They may show fresh blood or be typical tarry stools. The latter are found most often in neoplasms of the splenic flexure or descending colon.

4. Anemia. Anemia is especially characteristic of cancer of the ascending colon and the hepatic flexure, although it may occur as a result of neoplasm in the other parts of the colon.

5. Loss of strength. Loss of strength and often of weight are frequently the first complaints of some patients.

6. Palpable tumor. At times a tumor mass can be felt but frequently the growth is so small that it may be missed even at exploratory operation. Occasionally a tender mass can be palpated in the right side and appendicitis may be suspected.

*Diagnosis:* A middle-aged patient with the above signs and symptoms should receive a thorough investigation. This includes first, a complete history with special reference to the above symptoms of gastro-intestinal dysfunction, bleeding and loss of weight; second, a complete physical examination with special attention to abdominal tumors, liver enlargement and lymph node involvement; and third, a proctoscopic examination to detect rectal masses, x-ray examination to detect filling defects of the colon, stool examination to determine the presence of blood, and blood examination for anemia or syphilis. The most important diagnostic sign is the demonstration of a filling defect in the roentgenogram following proper preparation. The defect may be annular, polypoid, or obstructing, and usually shows a roughening of the marginal contour. Occasionally a mass may be obscured by an overlapping loop of barium-filled bowel. This may be obviated by examination in the oblique position.

*Treatment:* The treatment of carcinoma of the colon is essentially surgical and should be undertaken only with a background of surgical experience and judgment. Most of these tumors are composed of radioresistant cells and radiation is only palliative treatment. In general, operation should be done if there are no demonstrable hepatic metastases, if the growth is not adherent to the parietal peritoneum or adjacent viscera, and if the patient's general condition is satisfactory. The latter may be improved by preoperative care,

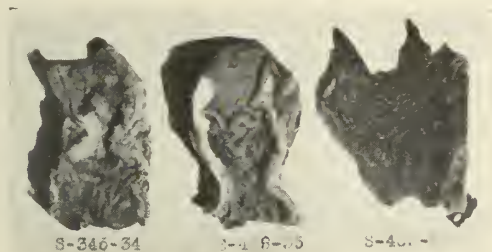


Fig. 3. Photographs of three surgical specimens which illustrate the tendency of some surgeons to make their incisions too close to the neoplasms of the colon.

use of a heavy barium meal. It is now known that a thinner barium mixture used as an enema and mixed with air aids greatly in the detection of many lesions of the colon. Even with the negative x-ray findings the clinical picture was typical of carcinoma of the colon.

#### GENERAL DISCUSSION

The incidence of carcinoma of the colon is about one-half that of cancer of the stomach. It occurs in males twice as often as females and is most frequently encountered between forty and sixty years of age. The symptoms are due to disturbance of intestinal function and vary somewhat depending upon the part of the colon involved. Three-fourths of the neoplasms are in the ascending and descending colon. One-fourth are divided between the hepatic and splenic flexures and the transverse colon. The more important symptoms are:

1. Abdominal pain or distress is one of the commonest and earliest symptoms in carcinoma of the colon. The pain may be a steady or intermittent ache or may be colicky. Distention is often associated with the pain and not infrequently the clinical picture is like that of subacute appendicitis.

2. Obstruction. The obstruction may be partial or complete, usually being preceded by gradually increasing constipation and sometimes accompanied by irregular attacks of diarrhea. Flatu-

i. e., adequate fluid intake and a diet with minimal residue, preoperative cleansing of the bowel by medical means or by surgical decompression (cecostomy), and by blood transfusions. Space will not permit a discussion of the surgical technic required in different types of cancer of the colon or their complications. Nevertheless it should be mentioned that before attempting any operation the surgeon should have full knowledge of the principles underlying surgery of the colon<sup>1,2,3,4,5</sup>. Whether resection is done in a one or two stage operation it is fundamental that the neoplasm be widely resected and that adjacent lymph nodes be excised. In our experience surgeons have made their incisions too close to the tumor mass and in one instance actually bisected the neoplasm (Fig. 3). Undoubtedly this type of surgery is responsible for much of the pessimism concerning the curability of carcinoma of the colon.

*Prognosis:* The prognosis is much more favorable than generally supposed. Between 50 to 60 per cent of the patients are operable when first seen. With improved methods of diagnosis and education of the public this figure should be considerably higher. In the past the operative mortality rate has been about 20 per cent. With early diagnosis and better preoperative care this should be reduced to approximately 10 per cent. Between 30 and 50 per cent five year cures have been reported for the various types of carcinoma of the colon. With more intensive study and better surgery 50 to 60 per cent of the operable cases should result in five year cures.

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#### COUNCIL MEETING

A special meeting of the council was called on Thursday, November 21, in Des Moines. The purpose of the meeting was to discuss with Dr. Bjerring, State Commissioner of Health, the plan which he and the other representatives of the State Department of Health have outlined for administering those sections of the Social Security Act which come under their jurisdiction. In addition to the councilors the officers of the society and members of the committees on Public Policy and Legislation, Child Health and Protection, and Medical Economics were present. The plan was presented in detail and was discussed at length. At the conclusion of the discussion the council recommended that this educational plan be submitted for the consideration of

the county medical societies before any official action was taken toward approving the plan. The outline of the plan drawn up by the State Department of Health is reproduced in this issue of the JOURNAL as a special article. A copy is being sent to each deputy councilor to be brought to the attention of the county societies.

#### IMPOSTER POSING AS DOCTOR'S SON

Notice has come to the central offices that an individual has been obtaining small sums of money from various physicians in the north central section of the state, under the pretense of being a doctor's son. Specific instances which have come to our attention have taken place in Hampton and New Hampton. The man is described as between twenty and twenty-five years of age; about five feet, eight inches, in height; weighing about two hundred pounds; brown hair; rosy complexion, and dressed as a college student. News of this man's whereabouts should be communicated at once to Sheriff F. C. Schwieger at Hampton, and Sheriff George Murray at New Hampton.

#### WARNING

We have received the following correspondence from a physician in Fort Dodge, indicating that members in that part of the state should investigate carefully before making any payments on policies carried by unknown concerns.

Gentlemen:

A man by the name of E. T. Logan was in my office October 19, claiming to be a representative of the Home Benefit Association of Rockford, Illinois. I paid this man \$5.00 for a policy to be delivered to me three days later. I was suspicious at the time, and after a few days' time wrote to the supposed company at Rockford, Illinois. In reply I received a letter which I am enclosing. I thought you should be notified in order that the doctors throughout the state might be protected from further swindle from this man, and if possible, catch up with him.

Dr.....

The reply from the president of the American Home Benefit Association of Rockford, Illinois, is as follows:

Dear Doctor:

Your letter addressed to the Home Benefit Association, Rockford, Illinois, was delivered to us. Inasmuch as there is no association by this name in Rockford, this letter, in addition to several others of the same nature from other doctors in Iowa, has been left at this office, undoubtedly because our name is similar. Our association does not have any representatives or salesmen, and knows of no individual by the name of E. T. Logan. Trusting that it will be possible for you to locate this man, and assuring you of our willingness to cooperate at any time, we are

Very truly yours,  
(Signed) O. M. Gripp, President.



# STATE DEPARTMENT OF HEALTH



## A WATER-BORNE EPIDEMIC OF TYPHOID FEVER

Twenty-four cases of typhoid fever were reported to the State Department of Health from Polk county during the week ending Saturday, November 30. With one exception, illness affected persons at the county farm and in the adjacent Woodside school district, several miles north of the Des Moines city limits.

### *Report and Investigation of Cases*

On Monday, November 26, two cases of typhoid fever affecting persons at the Polk County Farm, were reported to the department by Rodney P. Fagen, M.D., county physician. The diagnosis was confirmed by positive agglutination tests reported from the State Hygienic Laboratories at Iowa City. During the afternoon of the same day, several cases of illness, clinically typhoid fever and involving children who attended a consolidated school near the county farm, were reported by Hugh B. Woods, M.D., health officer of Saylor township. Investigation of the cases at the county farm and of factors to account for the manner of spread of infection, was made at once in cooperation with Dr. Fagen. Inspection of the water supply and sewage disposal system was referred to members of the Division of Public Health Engineering, under the direction of Mr. A. H. Wieters. On November 27 and subsequently, sick children who had attended Woodside school, were seen in several Des Moines hospitals and through home visits, in cooperation with attending physicians and Dr. Woods, Saylor township health officer.

### *Epidemiologic Factors in the Outbreak*

A case record form was completed for each patient, with information as to sanitary conditions, places visited and sources of water, milk and other food during the period of four weeks preceding onset of symptoms. The following paragraphs summarize the data pertaining to the typhoid cases at the county farm and the typhoid situation affecting families in the nearby school district.

#### A. The County Farm Situation

##### 1. Location

The buildings of the Polk County Farm adjoin Highway 65 on the east, about two miles north of Des Moines. Inmates and employees of the institution number about four hundred.

##### 2. The patients

Of seven patients with typhoid fever in the county farm group, three are employees, three are inmates,

and one a woman who visited the institution several weeks before onset of illness and who probably acquired infection while there.\* Date of onset of symptoms in the first case was November 3, and of the most recent case, November 20. One death occurred on November 27, the patient being a young man, twenty-three years of age, who became sick November 11.

##### 3. Water, milk and food

The county farm obtains water from two wells located on bottom land, one and one-half miles to the west. Water has been pumped to a well near the main building and lifted from there to a water tank. Raw milk has always been used, the institution having its own cows. Patients related to the county farm group took meals in the main dining room during the weeks preceding illness.

#### B. The Woodside School Situation

##### 1. Location

The two story brick building of the Woodside school is about 150 yards south of the county farm and on the west side of Highway 65. The school enrollment is 225. Families in the school district occupy, for the most part, small houses scattered over an area of several square miles to the east, south and southwest of the school.

##### 2. The patients

Sixteen school children, varying in age from nine to sixteen years, became sick between November 11 and 26, with symptoms of typhoid fever. At the present time, positive agglutination tests have been reported on eleven of these. In addition several suspicious cases have been hospitalized and are under observation in the school group.

##### 3. Water, milk and food

Since September 1 of this year, the school has had the same water supply as that of the county farm. The milk supply in homes with typhoid fever came from a variety of sources. No public gatherings had been attended by all of the patients during the weeks preceding the outbreak and most of the children had not visited at the county farm.

### *Probable Mode of Transmission*

The water supply of the county farm and the Woodside school is the only common factor to account for infection in the two groups concerned. Thorough investigation is being made of the water and sewage disposal systems, to determine definitely the manner in which water was contaminated.

(Continued on page 687)

\*Several additional cases have been reported among persons who in past weeks visited at the county farm.

# The JOURNAL of the Iowa State Medical Society

ISSUED MONTHLY

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STATE SECRETARIES AND EDITORS  
ATTEND CONFERENCE

Following a well established custom, the American Medical Association prepared a two-day conference in Chicago during the second week in November, and to this conference invited the secretaries of the component state medical societies as well as the editors of each of the state journals. The American Medical Association was represented by its officary and by members of its various councils and committees. The visitors were welcomed on behalf of the American Medical Association by James S. McLester, president. Following his hearty welcome, Dr. McLester reported a recent trip which he had made to Soviet Russia and, in colorful description, compared the standards and methods of medical practice in that country with the methods and standards of this country. While his report indicated an active program in medical education and in scientific research in Soviet Russia, the freedom of action in medical practice and a personal doctor-patient relationship is apparently denied the Russian physicians in their established program of governmental regimentation of medical practice.

Following the president's address, W. D. Cutter, secretary of the Council on Medical Education and Hospitals of the American Medical Association, reviewed the work of his committee. He indicated the signal achievements of the council in elevating the standards of medical education and also in securing a higher standard of service in the hospitals throughout the country. He promised a continuation of the work of the council and urged the state and county organizations to demand high educational standards and unimpeachable ethical conduct as a requisite for affiliation in local medical organizations. An insistent demand for a higher ethical service from local hospitals would

materially assist the council in its work. A completely up-to-date and revised report of the investigation of this council is promised during the forthcoming year.

Paul N. Leech, secretary of the Council on Pharmacy and Chemistry of the American Medical Association, reported the work of this body at considerable length. He pointed out the highly complicated and technical work required in the analysis and standardization of products accepted as new and non-official remedies, stressing the necessity of ever increasing labor to maintain security in those preparations accepted by the council.

In his discussion of the future developments of medical service, J. G. Crownhart, secretary of the State Medical Society of Wisconsin, commended the "Iowa" plan of county contract for the care of the indigent sick, indicating that his own society had found the plan workable and satisfactory. Appreciating that a most difficult problem exists in attempting to supply the low income group with an adequate medical service at a cost which they can pay, the Wisconsin State Medical Society has devised a loan plan to meet this problem. The plan predicates the pooling of all medical and hospital bills assessed a patient during an illness, providing a collection agency with authority to receive payments on account and distribute these payments on a prorated basis to the doctor and hospital creditors. This plan more justly distributes the money which a patient is able to pay, and at the same time encourages him to budget his income so that all bills can be adequately met. The details of this plan are explained in full in a booklet prepared and distributed by the Wisconsin Medical Society.

F. C. Warnshuis, secretary of the California Medical Society, explained the recent legislation enacted in his state which provided for an insurance plan for hospital service and outlined the organization and operation of the insurance plans which had already been adopted. Declaring the system satisfactory, he pointed out that the insurance plan was limited to Class "A" hospitals operating under authority of the State Board of Health.

A unique postgraduate system of education devised and conducted in the Harper Hospital, in Detroit, was discussed by Ralph H. Pino. This program calls for the assignment of a graduate physician to a definite and limited subject, determining that all of the clinical material of the hospital and out-patient department bearing upon this subject be brought to his personal attention. The physician in turn is expected to review the litera-



ture related to his problem and be prepared to present a full recitation upon any and all phases of his study at a Friday morning conference. Indicative of the enthusiasm and interest shown in this postgraduate plan, some one hundred physicians in Detroit are now actively engaged in the project and each feels that it is a privilege to be permitted this opportunity for active clinical research. The plan is obviously workable in Detroit and could without doubt be established in any community where a will to study exists among the practicing physicians and where good hospital facilities are available. President-Elect J. Tate Mason, of the American Medical Association, spoke for solidarity in the membership of the Association. He urged each secretary and editor to bring to the full attention of every member of his society the policies, plans, and operations of the American Medical Association. He expressed the belief that the public would welcome guidance in its deliberations on plans for the future practice of medicine. He urged the physician in his daily rounds to discuss intelligently with his patients these tremendously important problems of medical economics. "If all of the members of the American Medical Association, some 150,000 physicians, would carry out this suggested program, a million persons could be reached daily." How important it is for the family physician to assume this rôle of advisor and educator, since his patients have confidence in his ability and judgment and will accept advice given in this manner when they would look upon a stranger as a propagandist.

W. F. Braasch, of Rochester, Minnesota, reported that a special section in *Minnesota Medicine*, the official publication of the Minnesota State Medical Society, had been created for dissemination of information on medical economics. This section, he indicated, is written by a person trained in journalism and especially informed in the problems related to the economics of medical practice. He stated that, while the appropriate committees of the American Medical Association through its various avenues of securing data, were perhaps the most thoroughly informed on problems relating to the economics of medical practice and, while this information was published from time to time in various reports furnished the *Journal of the American Medical Association*, they believed that a section especially devoted to this subject in their journal would promote a greater dissemination of information than that now offered in other medical publications. He reiterated the statement voiced by President-Elect Mason that the public

must be informed and that the practicing physician can best supply this information. He urged, therefore, that an organized program of acquainting the physician with investigations and observations in medical economics be encouraged.

That each state medical journal should reflect medical thoughts and decisions rather than attempt to mold public opinion was the keynote of a discussion introduced by E. M. Shankland, editor of the *Journal of the Indiana State Medical Association*. He apparently arrived at this position as a result of several embarrassing situations, resulting from attempts on the part of his Journal to mold public opinion in matters of great interest to the physicians of his own state. He advocates a liaison committee on publications between the state and the national association.

Concluding the formal program and speaking from the theme of "The Trend of Medical Organizations," Morris Fishbein, editor of the *Journal of the American Medical Association*, indicated that with the ever increasing number of societies in all branches of medicine and surgery, the trend of medical organizations was definitely toward confusion. He indicated that it should be an objective of the American Medical Association to survey the field and to bring to general attention the object and purpose of the many medical societies so that the medical public could properly evaluate the work of these several organizations.

We hope, by giving this epitomized account of a very valuable meeting to create an active interest in the proceedings of this meeting; to prompt our readers to look forward to a more complete study of the several themes introduced; and to urge a very careful reading of the papers and addresses as they will be published from time to time in the Bulletin of the American Medical Association.

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#### INCOME TAX PROVISIONS

Several inquiries have come to the State Society office pertaining to whether, under the Iowa income tax law, doctors may deduct their expenses in attending postgraduate courses. Legal opinion and an opinion secured from the Corporation and Individual Income Tax Division of the Iowa State Board of Assessment and Review, both agree that such deduction is not provided for under either the Federal Income Tax Law or the Iowa Income Tax Law. "Educational expenses are held to be capital investment which cannot be prorated over a term of years for the reason that the 'useful life' of the education is indeterminate."

## Some Historical Aspects of Tuberculosis

LEWIS J. MOORMAN, M.D., Oklahoma City, Oklahoma

**BUY**  
CHRISTMAS  
SEALS



**FIGHT**  
TUBERCULOSIS

In the long roster of ailments to which human flesh is heir none has a more baffling history than tuberculosis. It is still one of the important mysteries of modern medicine. No specific cure for it has yet been discovered, although considerable knowledge has been assembled bit by bit through the ages by a list of men that reads like a "Who's Who" of the medical profession of past centuries. It

is a curious fact that many of these great physicians had tuberculosis at some time in their lives and that several of them died of it.

As one studies the course of this malady, one is confronted with a strange paradox. The tubercle bacillus in the human body gives rise to two distinct manifestations: the depletion of physical energy and the stimulation of mental activity. In those who are endowed with exceptional mental qualities and are at the same time suffering from tuberculosis, there often seems to be a strange psychic stimulus to creative accomplishment. In some individuals only the vision of death brings a consciousness of "the divine reality of life." It seems reasonable to say that the progress of medicine has been largely dependent on the stimulus of this dual influence.

Exhumed skeletons of prehistoric periods which bear the marks of tuberculosis provide our earliest record of the existence of the disease. The Code of Hammurabi, written more than 2,000 years B. C., indicates a possible knowledge of it. Aretaeus, in the first century A. D., gave accurate clinical descriptions of tuberculosis and suggested routine treatment similar to that employed today. Galen, the famous Roman physician of the second century, preserved the teachings of the Greek, Hippocrates, "father of medicine," and recorded his own observations. He was one of the first to employ climate in the treatment of tuberculosis, recommending the balmy zones immediately surrounding Vesuvius. No doubt Galen periodically came under the spell of the disease. He reports having had two physical breakdowns before he was twenty.

The period of the Dark Ages was characterized by twelve centuries of lethargy resulting from a combination of religious prejudices against the opening of the dead human body and a static con-

dition of existing knowledge. The works of Aristotle, Hippocrates and Galen furnished the foundation for the Renaissance of medicine in the fifteenth century, but no significant progress occurred until Sylvius, in the seventeenth century, gathered up the lost threads and added his work on the pathology of tuberculosis. Sylvius, it is thought, suffered from the disease. He stressed the importance of anatomic tubercle in the lungs and pointed the way for all great clinical teachers.

Not until 1761, a hundred years after Sylvius, can another genuine advance be recorded. Then came Auenbrugger "knocking at the human thorax." This was one of the most important discoveries in medicine, especially in diseases of the chest. Auenbrugger's publication describing the procedure he invented, called "percussion," is considered one of the greatest books in the history of medicine and marked the beginning of a new era.

Fifty years later Laennec (1781-1826), a young Frenchman, put the cause of diagnosis forward with unprecedented rapidity. When he came upon the scene, the diagnosis of diseases of the lungs and heart was more difficult than that of any other internal organ. He revived and amplified the use of auscultation and assured his fame forever by inventing the stethoscope. With remarkable industry and conspicuous discrimination he compiled a minute history of nearly four hundred cases of the disease before he was twenty-two years of age. These carefully tabulated case histories served as a foundation for his future researches and discoveries. In a short time he had made the most difficult diagnostic tasks relatively easy. In half the time now allotted for a medical education, Laennec, virtually without chart or compass, "observed, recorded, tabulated and communicated" practically all that is now taught with reference to the diagnosis of diseases of the thorax. He died of tuberculosis at the age of forty-five years.

The invention of the stethoscope enabled Corvisart, personal physician to the great Napoleon, to check the results of percussion in the living body. Auenbrugger may have failed to establish the value of his method because he could confirm his observations only at autopsy.

The great French teacher, Louis (1787-1872), who established clinical medicine throughout the world, correlated in a scientific way the symptoms at the bedside with the pathologic changes found at autopsy and inaugurated valuable statistical meth-



ods of recording his observations. Louis, who was one of the world's greatest clinical teachers, also suffered from tuberculosis. When thirty-four years of age he gave up private practice to pursue his clinical and pathologic investigations, the results of which he reported in a volume of 600 pages known as "Louis's Researches on Phthisis." It is impossible to estimate the value of his contribution to medical education. His spirit inhabits the wards of every well ordered hospital; his influence is evident wherever the principles of clinical medicine are taught.

Then came the discovery of the tubercle bacillus by Robert Koch in 1882. After centuries of anonymity the enemy was brought out into the open and mankind knew what it was fighting. A

were given off from the tube. He named them x-rays. Today Roentgen's discovery is one of the most important weapons in the doctors' armamentarium, not only in the diagnosis of tuberculosis, but of many other conditions.

Contemporaneously with Koch, a young American physician named Edward Livingston Trudeau (1848-1915) won his fight against tuberculosis in the Adirondack Mountains and in the victory discovered the importance of rest in bed as an aid to recovery. He established a sanatorium at Saranac Lake to test his belief and became the father of the sanatorium movement in America. His system of treatment is still the only known method of curing tuberculosis. One of the many honors bestowed upon him was his unanimous election



#### MEDICAL IMMORTALS

Successful progress in the fight against tuberculosis is made possible chiefly by the discoveries of these three men. Robert Koch (left) noted German research worker, discovered the tubercle bacillus and proved it was the cause of tuberculosis in 1882. Rene Theophile Hyacinthe Laennec (center) young French medical genius, invented the stethoscope in 1815. When only 45 he became a victim of the disease he did so much to help conquer. Wilhelm Konrad Roentgen (right) noted German physicist, discovered in 1885 what is probably the most important diagnostic aid in modern medicine—the X-ray.

few years later came Koch's famous announcement of his discovery of "tuberculin" as a cure for tuberculosis. The news stirred the world; but disappointment soon followed. Use of the substance showed that its therapeutic value had been overestimated. The disappointment was compensated to some extent, however, by the adaptation of tuberculin as a diagnostic aid. Today it is considered especially valuable in detecting the presence of tubercle bacilli in children before the disease becomes active.

The next great contribution to the fight against tuberculosis was made by Roentgen, a distinguished German physicist. He was experimenting with the tubes invented by Dr. Crookes for the purpose of passing an electric discharge through a vacuum when he made the startling discovery that some mysterious rays capable of passing through solid substances impenetrable to light

in 1904 as first president of the National Tuberculosis Association, which was organized in that year "for the study and prevention of tuberculosis."

In 1907 the Christmas Seal sale was adopted as a means of raising funds and every year since then the seals are placed on sale for a penny each between Thanksgiving Day and Christmas. The movement has grown so that there are today more than 2,000 affiliated units throughout the country. Each raises its funds locally by the sale of Christmas Seals and conducts its own local program. Considerable progress has been made in reducing the death rate, but tuberculosis is still the greatest cause of death between the ages of fifteen and forty-five years. Until it is under control it is to be hoped that the American public will continue to buy and use Christmas Seals.

# THE SOCIAL SECURITY ACT

## Proposed Plan of Operation in Iowa

WALTER L. BIERRING, M.D., Des Moines, Commissioner of Health

In order that there may be a better understanding of the Social Security Act, enacted at the last session of Congress, in its relation to the several professional interests concerned, it seems advisable to present the plans formulated by the State Department of Health to be inaugurated as soon as the necessary grants to states have been appropriated.

The Social Security Act is concerned with the medical and allied professions through the provisions contained in Titles V and VI of the Act.

The three divisions of Title V are to be administered by the Children's Bureau, U. S. Department of Labor, as follows:

- I. Maternal and Child Health Services in participation with the State Health Department. The apportionment of funds available to Iowa for this purpose will amount to about \$55,000 a year, with the possible addition of \$12,000 by reason of special needs.
- II. Services for Crippled Children in participation with the state agency having responsibility for medical care of crippled children. In Iowa the responsibility will probably be assumed jointly by the State University Hospital and the State Department of Health. The amount of the grant available for Iowa will approximate \$57,000 a year.
- III. Child Welfare Services in participation with the State Public Welfare agency, which in Iowa will be the Child Welfare Bureau of the State Board of Control (Dr. Mae Habenicht, M.D., Superintendent). The amount available for this purpose will be \$37,000 a year.

The program to be developed in all divisions is the responsibility of the official state agency, and the Children's Bureau will act only in a consultative and advisory capacity. The entire direction of professional activities of the Children's Bureau is now under physicians.

### I. MATERNAL AND CHILD HEALTH

The purpose of the federal grant is to enable each state, as far as it is practical, to extend and improve its services for promoting the health of mothers and children, especially in rural areas and in areas suffering from severe economic distress. In Iowa the proposed plan of participation in the federal grant will function through the Division

of Child Health and Health Education of the State Department of Health. There is an urgent need in this state for a wider appreciation of the hazards of maternity, better prenatal care, and extension of preventive measures in the preschool child, particularly among the rural population. The plan for maternal and child health services and demonstrations in Iowa will include:

#### A. Personnel of the Central Administration.

In addition to the Director of the Division of Child Health and Health Education and Director of Public Health Nursing in the Department the following personnel will be added as far as possible through the federal grant.

1. Assistant pediatrician or obstetrician.
2. Two public health nurses (especially trained in maternal and child health, to serve as advisors to county nurses, and available for limited local service in counties in which no public health nurse is employed).
3. Health educator, recognized physician with teaching ability to act in liaison with State Department of Public Instruction in outlining content and curriculum of school health, institutes for teachers in normal schools, and in general to integrate the health teachings of the schools with the activities of the State Department of Health, especially the Division of Child Health and Health Education.
4. Dentist, part or full time. Amount and character of services to be developed in conjunction with the State Dental Society.
5. Nutritionist or dietitian (if funds permit).

#### B. Educational.

1. Refresher course for physicians in pediatrics and obstetrics to be given by personnel from the State Department of Health, the State Medical Society through its Speakers Bureau, medical and dental faculties of the University of Iowa, and the Children's Bureau.
2. Refresher courses for nurses in public health nursing.
3. Health education for teachers, through institutes held in different parts of the state.
4. Parents; classes to be given separately or conjointly by a physician, nurse, dentist and health educator.



5. School children; subjects, health hygiene, nutrition, dental hygiene, and mental hygiene.

### C. Services.

1. Maternal; prenatal, delivery, and postpartum periods.

- a. Educational; publications.

Available upon general request (prenatal bulletins).

Available upon request of physicians only (prenatal letters).

- b. Mothers' classes.

A course of lessons for expectant and prospective mothers, and other interested women to be organized and conducted only with the approval of the local county medical society. Only mothers who present a card signed by a physician may enroll. The subject matter and its presentation must be approved either by the Committee on Child Health and Protection of the State Medical Society, or the interested county society. The cooperation of local or district dental society is desirable.

- c. Prenatal clinics.

In organizing these services preference is to be given to towns and villages having a population of less than 2,500, and in the open country.

Available funds to be allocated only if the average maternal mortality rate for the past five years exceeds the median rate for the corresponding period in the particular community as compared with similar governmental units in the state.

The local health department or other public health agency financed at least in part by tax funds, must assume responsibility for the conduct of such clinics. These clinics shall be established only with the approval of and under the supervision of the county medical society, and physicians assisting in the conduct of the clinics shall be paid for their services.

Only mothers who cannot otherwise obtain such care and instruction shall be eligible to register at such clinics and upon presentation of a card signed by a physician.

In rural areas where the necessary instruction and examination must be conducted in the office of the physician, the basis of remuneration for this service is

to be determined by the local county medical society.

- d. Delivery and nursing service.

Allocated as funds will permit and confined to rural areas.

2. Child Health.

- a. Infant.

- (1) Educational.

- (a) Publications.

Upon general request—Breast Feeding, Why Drink Milk, Sunlight for Babies, Keeping the Well Baby Well, Low Cost Layette, Care of Equipment Needed in Preparing Milk Feedings, Latest Mode for the Well Diapered Baby, etc.

Upon request only of a physician—diet schedules and a set of letters outlining the essential facts regarding the care of the baby during its first year of life.

- (b) Other forms of impersonal contacts

Radio, public lectures, exhibits, newspapers, bulletins, study course outlines.

- (2) Services.

- (a) Group examinations.

Baby health contests, well baby conferences, etc. Infant study classes (may be correlated with mothers' classes). To be under the supervision of the county medical society.

- (b) Preventive.

To be limited to diphtheria immunization and smallpox vaccination in infants under one year of age and largely to communities shown to be in greatest need of such services. To be developed in accordance with the plan approved by the Committee on Child Health and Protection of the State Medical Society in cooperation with the county medical society. Physicians participating to be paid on a basis approved by the county medical society.

- b. Preschool and School Child.

- (1) Educational.

Publications upon general request—Out of Babyhood Into Childhood,

Child Management, Parents' Part, Sex Education, etc.

(2) Services.

- (a) Preschool physical examination or inspection projects.
- (b) Preventive programs for diphtheria and smallpox, to be developed in accordance with the plan approved by the Committee on Child Health and Protection of the State Medical Society in cooperation with the county society.
- (c) Dental services. Under supervision of dentist associated with the Department and in cooperation with the local dental society.
- (d) Public health nursing service. The department to furnish a public health nurse upon request of the county superintendent and health officer to serve for a limited period in schools whenever any of the major communicable diseases are unduly prevalent. Available only in counties in which no public health nurse is employed.
- (e) Investigation and studies in:
  - Infant mortality
  - Maternal mortality
  - Dental caries
  - Mottled enamel
  - Goiter prevalence in school children
  - Tuberculosis, and other problems.

## II. SERVICES FOR CRIPPLED CHILDREN

This part of the Act will be administered in Iowa conjointly by the State University Hospital and the State Department of Health. "The purpose of the federal grant is to enable each state to extend and improve (especially in rural areas and in areas suffering from severe economic distress) as far as is practical under the conditions in each state, services for locating crippled children and for providing medical, surgical, corrective, and other services and care, and facilities for diagnosis, hospitalization and after care for children who are crippled, or who are suffering from conditions that lead to crippling."\*

## III. CHILD WELFARE SERVICES

These services in Iowa will be under the direction of the Child Welfare Bureau of the State

Board of Control. Other state and voluntary public welfare agencies in the state will probably function in an advisory capacity. The purpose of the federal grant is to enable the United States, through the Children's Bureau, U. S. Department of Labor, to cooperate with state public welfare agencies in establishing, extending, and strengthening, especially in predominantly rural areas, welfare services for the protection and care of homeless, dependent and neglected children, and children in danger of becoming dependent.

## TITLE VI. PUBLIC HEALTH WORK

The provisions of Title VI of the Social Security Act deal with public health work. Section 601 of the Social Security Act authorizes an appropriation for the purpose of assisting states, counties, health districts, and other political subdivisions of the states in establishing and maintaining adequate public health services, including the training of personnel for state and local health work.

The federal administration of Title VI of the Social Security Act will be under the direction of the United States Public Health Service and in each state under the state health agency.

The allotments to each state will be made on the basis of first, population; second, special health problems; and third, financial needs.

According to recent advice from the Surgeon General of the United States Public Health Service, the allotment for Iowa will approximate about \$145,000 a year.

All grants to aid existing state or local health projects will be supplemental to funds now being expended and in no case will serve to replace existing state or local appropriations for the purpose of relieving state or local authorities from expenditures now being made.

In submitting a budget for Iowa consideration is given to the following special public health needs:

1. Rural sanitation
2. Hygienic and public health laboratory
3. County public health units
4. Training of personnel.

### 1. Rural sanitation.

Iowa is a rural state with approximately 60 per cent of its entire population residing in rural areas. Its local health problems are largely concerned with rural sanitation, control of sanitary production of milk, public water supply and sewage disposal. Closely associated with these sanitary problems is the control of preventable diseases, with special reference to typhoid carriers, the increasing prevalence of undulant fever, and the inadequate protective

\*Quotation from Social Security Act.



measures against diphtheria and smallpox. To carry forward this extensive program for the betterment of rural public health conditions in Iowa will require additional personnel in the divisions of administration, epidemiology, public health engineering and vital statistics, which will be made possible by the allotment granted to Iowa.

2. Hygienic and public health laboratory.
- The Director of the State Hygienic Laboratory, Dr. M. E. Barnes, has recommended the establishing of a central public health or hygienic laboratory at Des Moines, in order to facilitate public health investigations. It is also considered practical to have auxiliary or branch laboratories established in different sections of the state.
3. County public health units.
- The organization of county public health units is provided by statute, Section 2246-c1-4, Code of Iowa, and comprises a fulltime health officer, two public health nurses, and a sanitarian. A county health unit is now operating in Woodbury County, and it is hoped through federal aid to establish similar units in Des Moines, Johnson, Story, Washington, and other counties where the need is indicated.
4. Training of personnel.

In order that there may be established promptly a reserve of properly qualified technical personnel with which to strengthen or enlarge staffs of state and local health services, a special grant is made available to pay living stipends, tuition, and traveling expenses, of the trainees who may be nominated by the State Commissioner of Health, the payment of stipends to be limited to a period not to exceed one year for any one individual.

Such, in outline, is the plan proposed for Iowa in order to participate in the federal grants authorized by Titles V and VI of the Social Security Act. The appropriations authorized by the Act will require further action by Congress which convenes in January, and any changes in the allotments will make it necessary to modify the Iowa plan accordingly.

The State Department of Health takes this opportunity to express its acknowledgment for valuable counsel obtained in the several conferences with the Committee on Child Health and Protection and the Councilors of the Iowa State Medical Society. It is the purpose of the Commissioner to request the Iowa State Medical Society to designate the Council and/or the Committee on Child Health and Protection as permanent advisory bodies of the State Department of Health in its

administration of the Social Security Act in Iowa. It is further contemplated to have a general advisory committee with representatives from the following organizations:

- Iowa State Medical Society
- Iowa State Dental Society
- Iowa State Association of Registered Nurses
- Iowa State Pharmaceutical Association
- Iowa Tuberculosis Association
- Iowa State Department of Public Instruction
- Iowa State Veterinary Medical Association
- Extension Divisions of State University, Iowa State College and State Teachers College
- Iowa Congress of Parents and Teachers
- Iowa Federation of Women's Clubs
- Women's Division Farm Bureau Federation
- Auxiliary American Legion
- Iowa League of Women Voters
- Iowa Conference of Social Workers
- Others to be added.

If this plan is to have any measure of success it must secure and hold the cooperation of the medical profession and allied health agencies, dental, nursing and public welfare.

STATE DEPARTMENT OF HEALTH

(Continued from page 679)

Control Measures

1. An emergency chlorinator was promptly set up at the county farm. The school water supply was shut off by the local health officer as soon as typhoid fever was suspected as the cause of illness. Drinking water and milk at the county farm are being boiled.
2. Inoculations with typhoid vaccine were administered by Dr. Fagen to inmates and employees at the county farm and by Dr. Woods to school groups and other contacts. Public health and visiting nurses of Des Moines and Polk county assisted greatly in this work.
3. The patients are under care and isolation at the county farm or in Des Moines hospitals.
- A detailed report of this outbreak of typhoid fever, with recommendations, will be submitted to the county board of supervisors.

PREVALENCE OF DISEASE

	Oct. 1935	Sept. 1935	Oct. 1934	Most Cases Reported From
Diphtheria .....	75	68	69	Black Hawk, Polk
Scarlet Fever .....	353	152	217	Boone, Black Hawk
Typhoid Fever ...	33	27	72	Jasper, Union
Smallpox .....	24	3	6	Fremont, Osceola
Measles .....	7	7	102	Woodbury
Whooping Cough.	85	51	34	Jasper
Cerebrospinal Meningitis ....	4	1	5	(For State)
Chickenpox .....	149	28	133	Woodbury, Polk
Mumps .....	219	66	60	Boone, Marion
Poliomyelitis ....	13	15	7	Clinton, Henry
Tuberculosis .....	48	42	66	(For State)
Rocky Mountain Spotted Fever..	0	2	0	
Undulant Fever..	11	6	21	(For State)
Syphilis .....	102	135	115	(For State)
Gonorrhea .....	180	227	173	(For State)

## SPEAKERS BUREAU ACTIVITIES

### CORRECTIONS ON LAST MONTH'S PAGE

The Speakers Bureau Committee regrets to announce that it made two mistakes in the report of the Cancer Committee which it published last month in the JOURNAL of the Iowa State Medical Society, and would like to take this opportunity to correct them.

The second sentence in the third paragraph of the report should have read as follows: "The incidence of tuberculosis is only forty per cent of the average for the total registration area."

The last sentence of the third paragraph should have read: "Articles dealing with cancer should be published in newspapers, and the radio should be used frequently."

### BOOST YOUR COLLEAGUES

The postgraduate courses just completed might be said to be the most successful ever presented by the Speakers Bureau Committee, from the standpoint both of enrollment and enthusiasm. These courses reached a total of about four hundred men, some of whom drove as far as ninety miles to hear each lecture. Such an attendance is ample proof of the fact that Iowa physicians are anxious to improve their knowledge of the new developments in their profession, and to render the best service to their patients. The sick person in Iowa is assured of competent medical care.

This striving for advancement in knowledge is worthy of acknowledgement. Boost your colleagues. Remember that the other physicians in your district have shown themselves open and alert to the advances in scientific medicine. Give them a boost whenever you can. There is no longer the necessity of going outside of your own state for special attention. Many Iowa physicians are doing excellent work on various phases of medicine, and their efforts should be appreciated and utilized. The physicians in Iowa have gained the reputation throughout the middle west of being progressive in the practice of medicine. You should "see yourself as others see you" and make a concerted effort to applaud the work being done by the other physicians in your state.

### IN MEMORIAM

On Christmas Day the Speakers Bureau Committee will broadcast a radio talk "The Greatest Gifts" which was presented two years ago by the late Dr. H. C. Payne of Pella. This was an outstanding radio talk, one which received much favorable comment both from within and outside the state. The Speak-

ers Bureau Committee takes this opportunity to express its appreciation for the privilege of having known this excellent doctor and the splendid spirit he displayed in all his practice of medicine. The Iowa State Medical Society is proud and grateful for having had a person of Dr. Payne's type as a member of the association.

### MERRY CHRISTMAS

To those men who have given so much of their time and effort to making the postgraduate courses a success:—Dr. J. E. McFarland of Leon; Dr. E. F. Hagen of Decorah; Dr. N. L. Hersey of Independence; Dr. Walter K. Long of Hampton; Dr. H. L. Brereton as committee member, and Dr. H. R. Powers of Emmetsburg; Dr. S. D. Maiden as committee member of Council Bluffs; Drs. James C. Hill and T. D. Wright of Newton; Drs. J. B. Miner, Jr., and C. H. McQuillen of Charles City; Dr. James Dunn, committee member, and Dr. Henry G. Meyers of Davenport; Drs. R. L. Barnett and W. S. Greenleaf of Atlantic; and Dr. C. L. Putnam of Holstein;—the Speakers Bureau Committee gives thanks.

To those many doctors throughout the state who have helped in the work of presenting programs before county medical societies, who have given talks before many organizations, and who have helped make possible the weekly radio broadcasts, the committee offers its sincere thanks. The cooperation of many physicians has made the work of the committee a pleasure, and so, as the Christmas season approaches, each individual member of the committee wishes for all those physicians a Merry Christmas and a very Happy New Year.

H. L. Brereton	L. C. Kern
James Dunn	S. D. Maiden
D. J. Glomset	L. R. Woodward

### RADIO SCHEDULE

WOI—Wednesdays at 4:30 p. m.

WSUI—Mondays at 8:00 p. m.

December 4—If I Were Twenty-One Again.

A. C. Page, M.D.

December 11—Safe Toys.

National Society for the Prevention of Blindness.

December 18—Rheumatism—Arthritis.

B. F. Wolverton, M.D.

December 25—The Greatest Gifts.

H. C. Payne, M.D., Deceased.

January 1—Your Doctor and You.

W. A. Rohlf, M.D.



# WOMAN'S AUXILIARY NEWS

*Edited by the Press and Publicity Committee*

MRS. DEAN W. HARMAN, *Chairman*, Glenwood, Iowa

## NEWS FROM OUR NEIGHBORING STATES

### Wisconsin

We hand Wisconsin the prize in Hygeia work. Wisconsin is proud to have three national officers. From the July issue of the *Wisconsin Medical Journal* we quote an article that should inspire other auxiliaries. "During the late spring the Milwaukee *Journal* announced that Station WTMJ had cancelled all contracts carrying the radio advertising of internal patent medicines. The station announced that such advertising was not 'deemed to be in the public interest' and that from now on 'products which claim to be universal cures and others which cannot support the claims made for them will be barred from the air by WTMJ. Network programs presenting offensive advertising will also be cancelled for the same reasons if conditions warrant.'

"The Milwaukee *Journal* is to be congratulated for the position it has taken. Back of the scenes, however, was the Woman's Auxiliary to the Medical Society of Milwaukee County. Over a period of time the auxiliary furnished the management with reports of the Bureau of Investigation of the American Medical Association concerning products then being advertised over the radio and in the daily press. The position of the radio station doubtless was taken as a result of cumulative evidence of the deleterious public health aspects of this type of advertising so well presented through the auxiliary's interest."

### Illinois

Mrs. W. D. Chapman, Silvis, Illinois, state president, says, "If I were to choose a theme for our work this year, I think I would like 'Education Leading to a Correctly Informed Membership.' This we are hoping to accomplish through our program, which we are correlating with our public relations activities. We feel that we have a very definite call this year, in that the subject chosen for high school debating teams is, Resolved: That the several states should enact legislation providing for a system of complete medical service to all citizens at public expense. This is a bit different from the proposed federal legislation of the past, but would involve states' rights and is a dangerous subject for high school pupils. Our auxiliaries will act as reference agents in the different counties, thus carrying out this slogan, 'Let's do our share; 'twill prove we care'."

### Minnesota

Minnesota has a splendid Public Relations program, including: essay contest, debates, Speakers Bureau, radio program helps, and a statewide Hygeia program.

### Missouri

Missouri stresses educational work through Public Relations meetings, essay contests, debate work, Hygeia, and organization.

### Nebraska

Nebraska's program includes tuberculosis, contagious diseases, blindness, milk, and immunization work. The national recording secretary, Mrs. Charles C. Tomlinson is the state president and she plans a well balanced year of activities.

### Dallas-Guthrie Society

The Woman's Auxiliary to the Dallas-Guthrie Medical Society met in regular session at Panora, Thursday, October 17, for a twelve-thirty dinner. Guests of the society were Mrs. M. C. Hennessy and Mrs. W. P. Hombach of Council Bluffs. Mrs. C. M. Porter, president of the Dallas-Guthrie Auxiliary, presided and after a business session introduced Mrs. Hennessy who gave an inspirational talk on what organizations are doing, and what benefits may be derived from active organizations. In October, members of the auxiliary entertained their husbands at a dinner-bridge in Guthrie Center at the Hill Top Tea Room, which was greatly enjoyed, and are planning another similar affair to be held in Perry at the Parks Tea Room, early in November.

### Mills County

The Mills County Auxiliary is planning to meet early in December at Glenwood. Health pamphlets are to be discussed as well as other news items of interest. Mrs. M. C. Hennessy of Council Bluffs will be a guest of the society.

"A battle that we must fight is against false information that is reaching the American public. Every hour the health of the world is jeopardized by advertising campaigns conducted by quacks over the radio, in newspapers, and in magazines. This misinformation ranks in strength with disease germs as a foe to the general public.

"The great foundation for all of our health work is the promotion of the magazine *Hygeia* which may be considered as the Bible of Auxiliary work. We cannot overemphasize the importance of the efforts of each member in securing subscriptions. Imagine the cumulative results if each of the 14,261 auxiliary members secured one new subscriber to *Hygeia* before January. Remember that you serve as a link in a powerful chain that is no stronger than you make it."

—Mrs. Robt. N. Herbert, President  
Woman's Auxiliary to The American  
Medical Association.

## SECRETARY'S PAGE

### 1935 MEMBERSHIP

As the year draws to a close, we take pride in calling your attention to our membership record for the year. With still a month to go, we have fifty-five more members than we had on December 31, 1934. We have only fifty-seven delinquent members—doctors who paid 1934 dues but none for the current year. Below is listed the ranking of the various districts as regards the number of delinquent members in each district.

### MEMBERSHIP HONOR ROLL

Second District—no delinquents!

### HONORABLE MENTION

Fourth District—1 delinquent —Woodbury County.

Third District—2 delinquents—O'Brien County, 1; Palo Alto, 1.

Tenth District—2 delinquents—Taylor County, 1; Union, 1.

First District—3 delinquents—Allamakee County, 1; Fayette, 1; Mitchell, 1.

Ninth District—3 delinquents—Keokuk County, 1; Wapello, 1; Wayne, 1.

The record for the other districts is as follows: Sixth District, 5 delinquents—Benton County, 1; Jasper, 4. Eighth District, 7 delinquents—Des Moines County, 3; Lee, 2; Louisa, 1; Muscatine 1. Seventh District, 8 delinquents—Clinton County, 4; Johnson, 2; Jones, 1; Linn, 1. Eleventh District, 10 delinquents—Cass County, 1; Fremont, 2; Harrison, 3; Pottawattamie, 4. Fifth District, 16 delinquents—Greene County, 6; Hamilton, 3; Polk, 6; Webster, 1.

### ONE HUNDRED PER CENT COUNTIES

In the counties named below, not only are there no delinquent members, but every eligible doctor in the county is a member of his society.

Adair  
Adams  
Audubon  
Boone  
Calhoun  
Chickasaw\*

Emmet  
Floyd\*  
Henry\*  
Howard  
Ida

Marion  
Marshall\*  
Mills  
Poweshiek  
Ringgold\*

Sac\*  
Tama\*  
Van Buren  
Washington  
Winnesheik  
Wright\*

\*Since this one hundred per cent record was established new men have come into the county but have not been there long enough to be eligible for membership.

There is still time to take care of your membership dues for 1935. See your county society secretary and help make your county and district 100 per cent.

The fourteenth edition of the American Medical Association Directory will be published in 1936. Corrections and changes are being compiled now. Be sure that your dues are paid so that you will be listed as a member of your organized profession in this directory.

*Robt. L. Parker*  
Secretary.



## SOCIETY PROCEEDINGS

### Black Hawk County

Herman L. Kretschmer, M.D., clinical professor of surgery, Rush Medical College, Chicago, was the speaker for the November meeting of the Black Hawk County Medical Society held Tuesday, November 26, at the Hotel President in Waterloo. Dr. Kretschmer's subject was Borderline Problems in Diagnostic Urology.

### Carroll County

Sixteen doctors were present for the regular meeting of the Carroll County Medical Society which was held Thursday, November 21, at St. Anthony's Hospital in Carroll. The program, which consisted of a symposium on rare fevers, was given by John C. Parsons, M.D., of Creston, who spoke on Tularemia; E. E. Shaw, M.D., of Indianola, who spoke on Undulant Fever; and H. E. Stroy, M.D., of Osceola, whose subject was Rocky Mountain Spotted Fever.

### Clinton County

R. A. Reis, M.D., of Chicago, was the speaker for the regular meeting of the Clinton County Medical Society which was held Thursday, November 7, at the Duell home in Camanche. Following a six-thirty dinner, the members enjoyed a talk by Dr. Reis on the subject, Some Phases of Conduct of Normal Labor.

### Decatur County

The Decatur County Medical Society held a meeting Tuesday, November 12, at the Decatur County Hospital. A symposium on rare fevers was presented by the following speakers: John C. Parsons, M.D., of Creston, Tularemia; Ernest E. Shaw, M.D., of Indianola, Undulant Fever; and H. E. Stroy, M.D., of Osceola, Rocky Mountain Spotted Fever.

J. E. McFarland, M.D., Secretary.

### Hardin County Annual Meeting

The annual business meeting of the Hardin County Medical Society was held Tuesday, November 26, at the Winchester Hotel in Eldora. After a six-thirty dinner, the following officers were elected for the coming year: Dr. Arthur W. Burgess of Iowa Falls, president; Dr. William Johnson of Alden, vice president; Dr. W. E. Marsh of Eldora, secretary and treasurer; Dr. J. A. W. Burgess of Iowa Falls, delegate; and Dr. C. M. Wray of Iowa Falls, alternate delegate.

### Harrison County

The Harrison County Medical Society convened for a six-thirty dinner Tuesday, November 5, in Woodbine. The meeting was held at the office of Dr. S. M. Clark, and A. C. Bergstrom, M.D., of Mis-

souri Valley, presented a paper on Diseases of the Newborn.

### Jackson County

Thursday, November 14, members of the Jackson County Medical Society enjoyed their annual Mississippi River catfish dinner. The meeting was held in the State Park lunchroom and the following scientific program was presented by members of the Iowa State Department of Health: The Economics of Disease Prevention, Walter L. Bierring, M.D.; Consideration of Epidemiology, Carl F. Jordan, M.D.; The Present Status of Immunization in Iowa, Frederick J. Swift, M.D.; and The Multiple Pressure Method of Vaccination, with motion pictures illustrating the Schick and Dick Tests, Joseph H. Kinaman, M.D.

### Linn County

Arthur E. Hertzler, M.D., of Halstead, Kansas, professor of surgery, University of Kansas, School of Medicine, will be guest speaker for the Linn County Medical Society at the meeting to be held in Cedar Rapids, Thursday, December 12. Dr. Hertzler will speak on Non-malignant Diseases of the Stomach. His address will be discussed by Drs. E. L. Rohlf of Waterloo, W. H. Donovan of Iowa City, and Edward H. Files of Cedar Rapids. W. J. Morrison, M.D., of Cedar Rapids will present a paper on The Physician and His Investments.

T. F. Hersch, M.D., Secretary.

### Louisa County

E. P. Russell, M.D., of the State University of Iowa, College of Medicine, presented an illustrated lecture on Fractures of the Hip, Thigh and Knee, before the Louisa County Medical Society, Thursday, November 14, when that organization met at the Albert Hook home near Toolesboro.

### Marion County

The Marion County Medical Society sponsored a public health meeting which was held at the Knoxville High School Tuesday, November 26. The following program was presented: Making School-Faculty and Parental Contacts in the Care of School Children, Corwin S. Cornell, M.D.; The Preschool Child—How Can the Opportunity Be Obtained to Give Him Proper Care, F. M. Roberts, M.D.; and High School and College Athletics, H. E. White, M.D. All physicians are of Knoxville.

### Marshall County

Two physicians from the Mayo Clinic of Rochester, Minnesota, furnished the scientific program for the Marshall County Medical Society at its meeting

held Tuesday, November 5, at the Hotel Tallcorn in Marshalltown. Austin C. Davis, M.D., spoke on Diseases of the Accessory Thyroid Glands, and Harry L. Smith, M.D., presented a paper on Diseases of the Heart.

#### Polk County

Henry E. Kleinschmidt, M.D., Educational Director of the National Tuberculosis Association, addressed the Des Moines Academy of Medicine and Polk County Medical Society, Tuesday, November 26, at Hotel Fort Des Moines. His subject was Tuberculosis—Past and Present. In his discussion he pointed to the fact that there are no new curative factors in tuberculosis but rather an extension of knowledge about the disease and treatment of it.

Arthur W. Erskine, M.D., of Cedar Rapids, presented The Linn County Tuberculosis Survey, a demonstration of x-ray films. This report was of much interest and was generally discussed.

N. B. Anderson, M.D., Secretary.

#### Pottawattamie County

Three physicians from Woodbury County were guest speakers for the Pottawattamie County Medical Society at the regular monthly meeting held Tuesday, November 26, at the Hotel Chieftain in Council Bluffs. After a six-thirty dinner, the following program was presented: Introductory Remarks, Prince E. Sawyer, M.D., President-elect, Iowa State Medical Society; Cholecystography, W. H. Gibbon, M.D.; Osteitis Deformans (Paget's Disease), J. W. Graham, M.D.

Arnold L. Jensen, M.D., Secretary.

#### Scott County

Charles Hugh Neilson, M.D., of St. Louis, was guest speaker for the Scott County Medical Society at its meeting held in Davenport, Tuesday, December 3. He spoke on The Effect of Weather on Human Conduct and Disease.

The annual business meeting of the organization was held Tuesday, November 5, and the following officers were elected to serve during the coming year: Dr. W. S. Binford, president; L. F. Sullivan of Donahue, vice president; Dr. Henry A. Meyers, secretary; Dr. Harry J. Evans, treasurer; Dr. W. S. Goenne, delegate; and Dr. Raymond E. Peck, alternate delegate.

#### Tama County

The Tama County Medical Society met Friday, November 15, in Garwin. After a turkey dinner, served to the thirty-six members and guests present, Nathaniel G. Alcock, M.D., of Iowa City, presented the scientific program of the evening which consisted of a paper on Urology.

#### Wapello County

A second joint meeting of physicians, dentists, veterinarians, pharmacists and nurses in Wapello

County was held in Ottumwa, Tuesday, December 3, under the auspices of the Wapello County Medical Society. The guest speaker for this occasion was Dean Wilbur J. Teeters of the College of Pharmacy, State University of Iowa. Dr. Teeters spoke on his experience with poison cases, from the standpoint of a criminal investigator.

#### Washington County

The Washington County Medical Society held its November meeting, Tuesday, November 26, at the Golf and Country Club House. A clinic on diseases of the skin was given by H. C. Willett, M.D., of Des Moines, from 4:30 until 6:00 P. M., at which time dinner was served to the members and guests. After dinner Dr. Willett gave an address on his recent European tour, which was greatly enjoyed.

W. S. Kyle, M.D., Secretary.

#### Woodbury County

The regular monthly meeting of the Woodbury County Medical Society was held Thursday, November 21, at the West Hotel in Sioux City, with E. V. Allen, M.D., of the Mayo Clinic, Rochester, as guest speaker. The subject of Dr. Allen's address was Peripheral Vascular Disease, and the discussion of his paper was opened by Arch F. O'Donoghue, M.D., of Sioux City, who demonstrated the Pavaex machine recently developed by Herrmann of Cincinnati.

#### Wright County

More than fifty physicians and guests convened in Clarion, Monday, November 25, when the Wright County Medical Society held a meeting for the purpose of arousing interest in immunization of the preschool child against infectious diseases. A dinner preceded the meeting and the following program was presented: The Economics of Disease Prevention, Walter L. Bierring, M.D.; Consideration of Epidemiology, Carl F. Jordan, M.D.; The Present Status of Immunization in Iowa, Frederick J. Swift, M.D.; and The Multiple Pressure Method of Vaccination, with motion pictures illustrating the Schick and Dick Tests, Joseph H. Kinnaman, M.D.

#### Northwest Iowa Medical Society

The Northwest Iowa Medical Society met in Sheldon, Tuesday, November 5, for the regular fall meeting. Harry M. Weber, M.D., and Phillip W. Brown, M.D., of the Mayo Clinic, Rochester, presented a symposium on Inflammatory Lesions of the Bowel, and F. S. Hough, M.D., of Sibley, led the discussion on the paper. Mrs. M. C. Hennessy of Council Bluffs, president of the Woman's Auxiliary to the Iowa State Medical Society, spoke on The Value of the Medical Auxiliary to the Profession. Officers elected at the business meeting include: Dr. L. L. Corcoran of Rock Rapids, president; Dr. Kermit Myers of Sheldon, vice president; Dr. F. P. Winkler of Sibley, secretary; and Dr. W. S. Balkema of Sheldon, treasurer.



## PERSONAL MENTION

Dr. J. C. Kessler of the College of Medicine, State University of Iowa, was the speaker for the public welfare department of the Fairfield Woman's Club on November 20. Dr. Kessler's subject was "Common Skin Infections."

Dr. J. B. Stoll, formerly of Creston, has moved to Clay Center, Kansas, where he will continue the practice of medicine.

Dr. W. P. Marble, who has been on the staff of the Mayo Clinic for the past four years, has located in Marshalltown where he will be associated with his brother, Dr. E. J. Marble, formerly of Liscomb.

Dr. W. E. Ash of Council Bluffs gave an address before the Glenwood Woman's Club on November 18. Dr. Ash spoke on the subject of "Mental Hygiene."

Dr. W. A. Harris, who has practiced medicine in Centerville for the past thirty years, has moved to Santa Ana, California, where he will continue to practice. His office and equipment will be taken over by Dr. B. B. Parker, formerly of Allerton.

Dr. O. C. Hardwig has associated himself for the practice of medicine with Drs. W. A. Rohlf and H. W. Rathe of Waverly. Dr. Hardwig served his internship at a Cleveland hospital, and for the past year and a half has been taking special training in general surgery.

Dr. George Keeney of Mallard spoke on "Keeping the Child Fit for School," before the Parent-Teacher Association of Graettinger on October 28.

Dr. Everett B. Getty has purchased the practice of Dr. H. L. Avery of Primghar. Dr. Getty was graduated from the State University of Iowa, College of Medicine in 1933 and served his internship at Ancker Hospital in St. Paul.

Dr. Horace M. Korn of the State University of Iowa, College of Medicine, spoke before the members of St. Luke's Hospital staff in Davenport, Tuesday, November 19. Dr. Korn's subject was "Recent Advances in Diagnosis and Therapy in the Field of Internal Medicine."

Dr. G. E. McFarland of Ames, announces the association of his son, Dr. G. E. McFarland, Jr., with him in the practice of general medicine and surgery. He was graduated from the State University of Iowa, College of Medicine in 1933, and for the past eighteen months has served an internship at Augustana Hospital in Chicago.

Dr. Allen W. Byrnes has entered the practice of medicine in Wall Lake. Until recently Dr. Byrnes has been engaged as camp physician for a C. C. C. camp at Whiting, Iowa.

Three physicians have located in Cascade for the practice of medicine: Dr. R. J. Eischeid has moved

to Cascade from New Albin; Dr. M. G. Beddoes, who has been on the staff of the Cherokee State Hospital since his graduation from the State University of Iowa, College of Medicine in 1933; and Dr. M. I. Nederhiser, also a graduate of the State University of Iowa, College of Medicine, with the class of 1929. Dr. Nederhiser formerly practiced at Brinkley, Arkansas.

## DEATH NOTICES

Herrick, Rubert Connor, of Gilmore City, aged fifty, died November 22, of heart disease. He was graduated in 1908 from the State University of Iowa, College of Medicine, and at the time of his death was a member of the Pocahontas County Medical Society.

Moon, Roy, of Attica, aged sixty-three, died suddenly November 24, of heart disease. He was graduated in 1903 from the State University of Iowa, College of Medicine, and at the time of his death was a member of the Marion County Medical Society.

Parker, Ralph H., of Des Moines, aged sixty-two, died November 13, following a three-month illness. He was graduated in 1898 from the State University of Iowa, College of Medicine, and at the time of his death, was a member of the Polk County Medical Society.

## OBITUARY

RALPH H. PARKER, M.D.  
1873-1935

It is with a feeling of loneliness that one notes the breaking of that bond of good fellowship which binds men together in the ancient and honorable profession of medicine. When this bond also encompasses many years of a close personal friendship throughout the most active and enthusiastic period of life, during which as colleagues, we shared the joys and sorrows, successes and disappointments, which of necessity come to men engaged in general practice, this feeling is intensified into a sense of deep personal loss.

It was late in the summer of 1898 that a young physician who had just located in Storm Lake paid his first visit to a country doctor in a neighboring town. Thus began a long period of fraternalism and helpful counsel which the writer enjoyed until Dr. Parker's untimely death in Des Moines, November 11. Dr. Parker was engaged in a large medical and surgical practice in Storm Lake for more than ten years, pursuing from time to time short courses of study in Chicago, and in 1901, in Berlin. After another period of study in Berlin, and Oxford, he located in Des Moines in 1911.

Throughout his entire professional life he was active in medical circles, having been secretary and president of both the Buena Vista County Medical Society, and the Polk County Medical Society and Des Moines Academy of Medicine. He had a subtle wit which never failed him, even in his last illness. Dr. Parker will be greatly missed by his many friends, both close and casual, in the varied fields of his active and successful career. W. E. Sanders, M.D.

# HISTORY OF MEDICINE IN IOWA

*Edited by the Historical Committee*

DR. FRANK M. FULLER, Keokuk  
DR. JOHN T. MCCLINTOCK, Iowa City  
DR. PAUL W. VAN METRE, Rockwell City

DR. TOM B. THROCKMORTON, Des Moines  
DR. WALTER L. BIERRING, Des Moines  
DR. WILLIAM JEPSON, Sioux City

## History of the State Society of Iowa Medical Women\*

### Part I. From 1898 to 1905

JEANNETTE DEAN-THROCKMORTON, Ph.B., A.M., M.D., Des Moines

With the present recrudescence of interest in medical history, when an attempt was made to write the annals of the oldest state society of medical women in the United States, that of the State Society of Iowa Medical Women, it was discovered that the first eight years of records were lost, since the existing secretary's book opens in 1906. Research was made to discover the beginnings of this society; and from the many sources consulted, the best results were obtained from the old blue-backed *Iowa Medical Journal*, edited from 1895 to 1914 by Drs. Kime and Dorr. This Journal, excellent though it was in its day, lacked the scientific indexing of our present publication, so that the writer had painstakingly to wade through the personal items in each journal in order to uncover the stray bits of data that make up this compilation.

Fortunately, a record in permanent form<sup>1</sup> was found stating that in 1898, two days before the meeting of the Iowa State Medical Society, the women physicians of Iowa met on May 16 and 17 at the Equitable Building in Des Moines and organized the Social Society of Medical Women<sup>12</sup>, which title was changed the following year to its present form, The State Society of Iowa Medical Women. The charter members were as follows:

Mary D. Ardery, Knoxville; Mary Breen, Le Mars; Margaret E. Colby, Clear Lake; Edith Gould Fosnes, Des Moines; Rebecca Hanna, Red Oak; Kate Mason Hogle, Mt. Vernon; Sarah A. Kime, Des Moines; Azuba D. King, Des Moines; Evaline Peo, Boone; Jessie V. Smith, Winterset;

Josephine Wetmore, Grinnell, and Rebecca Wright, Des Moines. Of these, all are now dead; the last one, Dr. Kate Mason Hogle, passed away June 1, 1934, at the age of seventy-four years.

At the first meeting May 16, 1898, Dr. Jessie V. Smith was chosen chairman in recognition of her active efforts to promote such an organization, and Dr. Evaline Peo was elected secretary. Drs. Breen, Peo and Hogle were appointed to draft a Constitution and By-Laws, and the new society was launched with the distinct understanding that it was not to divert members from the Iowa State Medical Society, but rather to encourage greater activity in the work of that Society, and more especially to cultivate social relations and mutual helpfulness among women practitioners.<sup>9</sup> The women physicians were to meet at the same place and one day in advance of the Iowa State Medical Society,<sup>9</sup> to which its membership also belongs and with which it sustains most cordial relations.

The program for this first meeting was quite ambitious; and, as we reflect upon it after thirty-eight years, we should regard it as a stimulus to emulate its splendid example and carry on equally well.

MAY 16, 1898, MONDAY, 2:00 P. M.

Opening Prayer

Address of Welcome, Mattie Locke Macomber, Des Moines

Introductory Address, Dr. Sara Kime, Des Moines

Infant Feeding, Clothing and Care, Dr. Mary Louise Tinley, Council Bluffs

Discussion opened by Dr. G. Warbis, Lohrville

\* Presented before the Thirty-eighth Annual Session, State Society of Iowa Medical Women, Davenport, May 8, 1935.



Cholera Infantum and Its Treatment, Dr. Mary D. Ardery, Knoxville

Discussion led by Dr. Mary Breen, Le Mars

Osteopathy, Dr. Margaret E. Colby, Clear Lake

Discussion led by Dr. Rebecca Hanna, Red Oak

A Short Talk on Tokology, Dr. Adella R. Nichol, Davenport

Discussion led by Dr. Mary B. Tuttle, Burlington

MAY 17, TUESDAY, 8:30 A. M.

Opening Prayer

The X-Ray, Minta A. McClintock, Glenwood

Hypnotism in the Treatment of Disease, Dr. Rosa A. Lowder, Ledyard

Discussion: Dr. Sara Kime, Des Moines

Some of the Injuries to the Mother During Child-birth and Their Management, Dr. Evaline Peo, Boone

Discussion: Dr. H. B. Amy, Decorah

The Woman Doctor in the Lying-In Chamber and the After-Care of the Patients, Dr. Jessie V. Smith, Winterset

Discussion: Dr. Mary D. Ardery, Knoxville

Treatment of Puerperal Eclampsia and Report of Cases, Dr. Josephine M. Wetmore, Grinnell

Discussion: Dr. Pauline Bertram, Keokuk

The Treatment of Tonsillitis, Dr. Belle Conrad, Webster City

Discussion: Dr. Isabell Cowan, Dubuque

Some Later Methods of Treating Tuberculosis, Dr. Mary A. Coveny, Clinton

Discussion: Dr. Edith Gould Fosnes, Des Moines

The Treatment of Typhoid Fever, Dr. Mary Breen, Le Mars

Discussion: Dr. Agnes Eichelberger, Sioux City

Appendicitis, Its Treatment Both Surgical and Expectant, Dr. Bare, Van Meter

Discussion: Dr. Jessie V. Smith, Winterset

The Woman Physician, a Future Factor in the Community, Dr. Clara B. Willis, Clarinda

The second annual session met in Cedar Rapids,<sup>2</sup> Tuesday, May 16, 1899, with the following officers:

President, Dr. Rebecca Hanna, Red Oak

First Vice President, Dr. Azuba King, Des Moines

Second Vice President, Dr. Mary Breen, Le Mars

Secretary, Dr. Jessie V. Smith, Winterset

Treasurer, Dr. Josephine Wetmore, Grinnell

The meeting opened at 10:00 a. m. to which a delegation of gentlemen from the state society was welcomed and made members by invitation. As high-lights of the program the following papers and events may be cited:

Dr. Rebecca Hanna of Red Oak, in her president's address, stated that the object of the women's society was to gather up the isolated medical women over the state, bind them together in fraternal helpfulness toward each other, encourage them in the arduous work of their profession, and develop their interest in the Iowa State Medical Society, in which men and women physicians of the state of Iowa are working together in harmony, emulating each other in good works, and together sustaining and advancing the noble profession of medicine.

What Methods Will Secure a Greater Attendance of Medical Women at the State and Local Medical Societies and Incite in Them More Interest in Society Work? Dr. Evaline Peo, Boone.

Treatment of Diphtheria, Dr. Jessie V. Smith, Winterset. Discussed by most of those present, including a number of the gentlemen.

A letter of congratulation was sent to Dr. Mary Breen of Le Mars on her appointment as health officer; and another to Dr. Kate Mason-Hogle on having taken another partner into the firm (a ten pound one).

The retiring president, who had completed her twenty-fifth year of practice, was presented with a beautiful bouquet of twenty-five roses with the congratulations of the society, to which she responded with gracious thanks.

The third annual meeting was held Tuesday, May 15, 1900, in Des Moines,<sup>3</sup> with the following officers presiding:

President, Dr. Edith Gould Fosnes, Des Moines

First Vice President, Dr. Azuba D. King

Second Vice President, Dr. Jessie V. Smith, Winterset

Secretary, Dr. Jennie McCowen, Davenport

Treasurer, Dr. Nancy M. Hill, Dubuque

The fourth annual session met May 14, 1901, in Davenport,<sup>4 and 5</sup> with practically the same officary, except that Dr. King assumed the presidency this year, and Dr. Mary A. Breen of Le Mars was named first vice president.

The outstanding features of the program were as follows:

Women Physicians in India, Dr. E. A. Ilahi Baksh, Bombay, India

Medical Matters in Cuba, Dr. Edith Gould Fosnes, Des Moines

Dress of School Children, Dr. Nancy M. Hill, Dubuque

Prophylaxis in Obstetrics, Dr. Agnes Eichelberger, Sioux City

The fifth annual session was held May 20, 1902, in Des Moines.<sup>6</sup> Officers were:

President, Dr. Margaret E. Colby, Clear Lake  
Vice President, Dr. Kate Mason Hogle, Mt. Vernon

Secretary, Dr. Jennie McCowen, Davenport  
Assistant Secretary, Dr. Mary B. Tuttle, Burlington

Treasurer, Dr. Agnes Eichelberger, Sioux City  
On the program, which began at 10:30 a. m.,

we note the following:

Differential Diagnosis of Some Eye Troubles, Dr. Lily Kinnier, Dubuque

Ablatio Placentae, Dr. Josephine Wetmore, Grinnell

Auto-Intoxication, Dr. Adele Fuchs, Des Moines

The Use of Sanitarium Methods in Private Practice, Dr. Mary Lawson Neff, Cedar Rapids

The sixth annual session was held April 14, 1903, at Sioux City,<sup>7</sup> with the following officers:

President, Dr. Jessie V. Smith, Winterset  
Vice President, Dr. Mary A. Coveny, Clinton  
Secretary, Dr. Jennie McCowen, Davenport  
Treasurer, Dr. Agnes Eichelberger, Sioux City

This year the guest of honor was Dr. Adeline E. Portman of Washington, D. C., who spoke upon Iritis Spongioso. Other papers were:

The Duty of Physicians to Disseminate Hygienic and Sanitary Knowledge, Dr. Azuba D. King, Des Moines

Prevention of Insanity, Dr. Lena Beach, Cherokee  
Discussion opened by Dr. Anne Burnet, Mt. Pleasant

Physical Exercise for Growing Children, Dr. Edith Gould Fosnes, Des Moines

Discussion opened by Dr. Rosa E. Lowder, New Providence

Cholera Infantum, Dr. Mary A. Breen, Le Mars  
Summer Diarrhea of Children, Dr. Jennie Ghrist, Ames

Nephritis Albuminosa, Dr. Mary D. Ardery, Knoxville

Uterine Curettage, Dr. Mary A. Coveny, Clinton  
The seventh annual session convened May 18 and 19, 1904, in Des Moines.<sup>8 and 10</sup> Officers were:

President, Dr. Jennie McCowen, Davenport  
Vice President, Dr. Kate Mason Hogle, Mt. Vernon

Secretary, Dr. Anne Burnet, Mt. Pleasant  
Treasurer, Dr. Agnes Eichelberger, Sioux City

The session opened at 9:30 a. m. with prayer and greetings, followed by an interesting and diversified program. The guest of honor, Dr. Mary E. Bates of Denver, spoke upon Headache, a Study in Method. Other addresses were:

Common Ailments, Dr. Mary Lawson Neff, Cedar Rapids

Status of Medical Women in Iowa, Dr. Anne Burnet, Mt. Pleasant

Puerperal Peritonitis, Dr. Jennie Ghrist, Ames  
Ptomaine Poisoning, Dr. Martha Anderson, Moline, Illinois

How Medical Matters in Europe Look Through an American Woman's Eyes, Dr. Agnes Eichelberger, Sioux City

Case of Hepatoptosis, Dr. Kate Mason Hogle, Mt. Vernon

Symposium: Sphere of Usefulness of Organizations to Medical Women: Drs. King, McCowen and Colby

New members admitted were the following: Clara B. Whitmore, Sioux City; Velura E. Powell, Red Oak; Alice C. Stinson, Estherville; Anna Odell, Dubuque; Mary C. Heilsen, Elkhorn; Ada M. French, Pella; Kate Harpel, Boone, and Alice Burton, Sidney.

The eighth annual session was held May 16, 1905, in Des Moines.<sup>11</sup> Evidently no report of this meeting was ever turned in to the *Iowa Medical Journal*, since a careful search through the issues of this entire year fail to yield any item concerning the Society, but from an old program the following facts are obtained and this meeting visualized:

President, Dr. Mary D. Ardery, Knoxville  
Vice President, Dr. Anne Burnet, Mt. Pleasant  
Secretary, Dr. Lily Kinnier, Dubuque  
Treasurer, Dr. Sophia Hinzie Scott, Des Moines

The guest of honor, Dr. Madge Patton Hawkins of Terre Haute, Indiana, spoke upon, Shall We Differentiate the Fractures of the Neck of the Femur? Other presentations included:

When Shall We Advise Surgical Operation for Fibroid Tumors of the Uterus? Dr. Amelia Sherman, National

Use and Abuse of the Curette, Dr. Mary A. Coveny, Clinton

New members taken in were: Dr. Margaret V. Clark, Waterloo; Dr. W. S. Y. Robb, Hiteman; Dr. Margaret Gatchel, Des Moines; and Dr. Lucy Harbach, Des Moines.

After thirty years one is impelled to comment upon the topic of the guest of honor, since not only at that time was the treatment of this type of fracture occupying the minds of the best surgeons in Iowa, but even today our best medical journals contain articles upon this subject, showing that it is still of paramount importance.



The above history showing the work of the first eight years of the State Society of Iowa Medical Women, setting forth its purposes and objects, is worthy of our admiration, and we who follow should not fall behind the goal they have set, that of having scientific programs of value.

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9. Old Constitution and By-Laws.
10. Program of 1904.
11. Program of 1905.
12. Letter of Dr. Kate Mason Hogle, dated May 10, 1931.

## HISTORY OF MEDICINE IN JEFFERSON COUNTY

(Concluded from last month)

197. Waugh: No data.

198. Webb, Watenam Thomas: (1923 to this date.) Born in 1886 in West Virginia. Graduated in 1911 from the Hahnemann Medical College and Hospital, Chicago. Practiced in Audubon, Iowa, from 1919 to 1923, when he moved to Fairfield, Jefferson county.

199. White: (?) Practiced in Pleasant Plain. No data.

200. Wiggins: (1908?) Dr. Wiggins bought out Dr. Clement when he left Glasgow. No data.

201. Winsell, F. F.: (1925-1933.) Born in Jefferson county in 1868. Studied medicine with Dr. S. K. Davis at Libertyville and then took a three year course in the Keokuk Medical College, graduating in 1895. Practiced in Iowa from 1895 until he moved to Pasadena, California, in 1924 and is now practicing there.

202. Woods, P. N.: (1854-86.) Born in Ohio in 1829. Graduated in medicine from the Eclectic Medical College of Cincinnati in 1854. He began practice at Beckwith, Jefferson county, Iowa, in 1854, but moved to Fairfield in 1856 where he practiced until his death in 1886. He was perhaps the most distinguished surgeon from Jefferson county in the Civil War. In 1862 he was examining surgeon for recruits in Jefferson county. He usually drove a two wheeled sulky but had a buggy and fine team when he "drove out." Dr. Wood's saddle bags contained twenty bottles all holding liquid medicines. There were no tablets or pills. Dr. Woods was one of the leading doctors of his day in Fairfield and a number of the younger doctors read medicine in his office.

203. Woods, Harry Eugene: (1883-1909.) Born in Jefferson county in 1857. Studied with his father, Dr. P. N. Woods. Graduated from Rush Medical College in 1883. Practiced in Fairfield from 1883 to 1887 and also from 1889 to 1894; at Libertyville from 1887 to 1889; at Batavia from 1894 to 1909 and since 1909 has been in Birmingham, just south of the Jefferson county line. A congenial, honorable well educated gentleman Dr. Harry Woods has gone the even tenor of his way commanding respect, as a citizen, wherever he lived.

204. Woodard: (1874?) No data. Dr. Woodard was a homeopath and was associated at one time with Dr. King.

205. Worthington, David H.: (1878-1892.) Born in Iowa City, Iowa. Graduated from Rush Medical

College in 1878 and began practice in Fairfield the same year. In 1892 Dr. Worthington sold his property to Dr. H. H. Hoopman and moved to Hampton, Virginia. He retired because of ill health in 1933 and died in Aurora, Illinois, in May, 1934.

206. Wright, William S.: No data.

207. Wright, Edwin: (?) Practiced in Abingdon. Came from Kentucky. Died in Abingdon. After his death his wife practiced midwifery near Abingdon.

THE END

## CORRESPONDENCE

Journal of the Iowa State Medical Society,  
Des Moines, Iowa.

Dear Editor:

In the "Interesting News in Brief," on page 464 in the August number of the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY, I note a statement regarding early childbirth, in which a record is claimed by a Mohammedan girl at the age of seven. This is not the record as the following report\* will show:

A child was born on April 4, 1924, of normal parents. The child's maternal grandparents were normal in every way, but the paternal grandmother was a very large woman, possibly affected with gigantism. When this child was four years of age, menses began, being of twenty-eight day intervals and normal in every way, and continued for one year; during the second year, every two months. The child walked and talked at the age of two years. During her sixth year of life the patient became pregnant, and while still in the sixth year was delivered of a seven and one-half pound infant, by craniotomy. The labor lasted thirty and one-half hours, after which time the cervix was dilated manually from three cms. to completion under ether narcosis, and the craniotomy and extraction done. The cervix and perineum were repaired and the patient made normal recovery except for an elevation of temperature to 38.5 degrees, Centigrade, on the sixth day. There was milk in the mother's breasts for seven days. The father of the babe was the maternal grandfather, sixty-nine years of age. Two months after the delivery menses again began, and were normal thereafter.

At the time of delivery the patient weighed 43.17 kg., and was 126.5 cm. tall, this height corresponding to a ten year old, and the weight to a fifteen year old. The breasts were developed to about the size of a sixteen year old girl.

V. Haller reports a case where the menses began at one year; and the child became a mother at nine years of age; menstruated to the age of fifty-two; and died at the age of seventy-five.

We thought you might have space to print this abstract in a number in THE JOURNAL.

Very truly yours,

Harold A. Lockhart, M.D.

\*Chaschinsky, P. C., and Jerschow, S. I.: Zentralb. fur Gynak. lvii:2252-2256 (September 23) 1933.

# THE JOURNAL BOOK SHELF

## BOOKS RECEIVED

- THE AMERICAN ILLUSTRATED MEDICAL DICTIONARY**—By W. A. Newman Dorland, M.D., Seventeenth edition, revised and enlarged. Octavo of 1573 pages with 945 illustrations. W. B. Saunders Company, Philadelphia and London, 1935. Price, \$7.50.
- ANNUAL REPRINTS OF THE REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR 1934**, with the comments that have appeared in *The Journal*. Press of the American Medical Association, Chicago, 1935. Price, \$1.00.
- ARTHRITIS AND RHEUMATOID CONDITIONS**—Ralph Pemberton, M.D., professor of medicine, Graduate School of Medicine, University of Pennsylvania. Second edition, thoroughly revised. Illustrated with 69 engravings. Lea & Febiger, Philadelphia, 1935. Price, \$5.00.
- THE AUTONOMIC DISEASES OR THE RHEUMATIC SYNDROME**—By T. M. Rivers, M.D. Dorrance & Company, Philadelphia. Price, \$3.00.
- CLINICAL LABORATORY METHODS AND DIAGNOSIS**—By R. B. H. Gradwohl, M.D., director of laboratories, St. Louis County Hospital. With 328 illustrations and 24 color plates. C. V. Mosby Company, St. Louis, 1935. Price, \$3.50.
- CLINICAL MANAGEMENT OF SYPHILIS**—By Alvin Russell Harnes, M.D., chief of Congenital Luetic Clinic, New York Hospital. The Macmillan Company, New York, 1935. Price, \$1.50.
- THE CRIPPLED AND THE DISABLED**—By Henry H. Kessler, M.D., Newark, New Jersey. Columbia University Press, 2960 Broadway, New York City, 1935. Price, \$4.00.
- DISEASES OF THE NERVOUS SYSTEM**—By Smith Ely Jelliffe, M.D., formerly professor of psychiatry, Fordham University, New York; and William A. White, M.D., superintendent, St. Elizabeth's Hospital, Washington, D. C. Sixth edition, 1175 pages, illustrated with 497 engravings. Lea & Febiger, Philadelphia, 1935. Price, \$9.50.
- DISEASES OF THE SKIN**—By Richard L. Sutton, M.D., professor of dermatology, University of Kansas; and Richard L. Sutton, Jr., M.D., assistant in dermatology, University of Kansas. Ninth edition, revised and enlarged, with 1310 illustrations and eleven colored plates. C. V. Mosby Company, St. Louis, 1935. Price, \$12.50.
- THE DOCTOR AND THE PUBLIC**—By James Peter Warbasse, M.D., Brooklyn, New York. Paul B. Hoeber, New York, 1935. Price, \$5.00.
- ELECTROTHERAPY AND LIGHT THERAPY**—By Richard Kovacs, M.D., clinical professor and director of physical therapy, Polyclinic Medical School and Hospital, New York. Second edition, enlarged and thoroughly revised. Octavo of 696 pages, illustrated with 263 engravings. Lea & Febiger, Philadelphia, 1935. Price, \$7.50.
- EMOTIONS AND BODILY CHANGES**—By H. Flanders Dunbar, M.D., Ph.D., departments of medicine and psychiatry, Columbia University, Columbia University Press, New York, 1935. Price, \$5.00.
- INTERNATIONAL CLINICS**—Edited by Louis Hamman, M.D., Johns Hopkins Hospital, Baltimore. Volume II, Forty-fifth Series. J. B. Lippincott Company, Philadelphia and London, 1935.
- INTERNATIONAL MEDICAL ANNUAL**—A Year Book of Treatment and Practitioner's Index. Edited by H. Letheby Tidy, M.D., and A. Rendle Short, M.D. William Wood and Company, Baltimore, 1935. Price, \$6.00.

## BOOK REVIEWS

### OBJECTIVE AND EXPERIMENTAL PSYCHIATRY

By D. Ewen Cameron, M.D., D.P.M., Physician in charge, Provincial Mental Hospital, Brandon, Man. The Macmillan Company, New York, 1935. Price, \$3.00.

This book offers a critical evaluation of present day psychiatric practice. In the first forty pages devoted to a general discussion the author indicates the manner in which psychiatry has advanced to its present state. He tells why psychiatry has been so slow in yielding up methods long since abandoned by other branches of medicine. His plea is to dehumanize the subject, reject observational and impressionistic methods and build a psychiatry on quantitative, verifiable and repeatable methods. The balance of the book constitutes a discussion of such procedures as intelligence tests, heredity, statistics and various physiochemical investigations as to their value, limitations and possibilities.

This is an excellent and comprehensive presentation of the present imperfect state of psychiatric practice and is a book which by all means should be in the library of every sincere and forward looking psychiatrist. However, the author's vision of a completely enlightened and scientific psychiatry, while highly desirable, must be considered as an ideal for the future rather than a working plan for the present.

R. C. D.

### DISEASES OF THE NERVOUS SYSTEM

By Smith Ely Jelliffe, M.D., formerly professor of psychiatry, Fordham University, New York; and William A. White, M.D., superintendent, St. Elizabeth's Hospital, Washington, D. C. Sixth edition, 1,175 pages, illustrated with 497 engravings. Lea & Febiger, Philadelphia, 1935. Price, \$9.50.

For the past twenty years the textbook of neurology and psychiatry by Jelliffe and White, has been accepted as a standard textbook on this subject and has been widely used by medical schools for teaching purposes. Through the twenty years the authors have maintained their distinction as outstanding in this field of medicine, and through their large clinical facilities and extensive reading kept entirely abreast of current thought and development in these fields. From its first edition, this book has treated diseases of the nervous system from the physiologic aspect, and has attempted to correlate diseases of the nervous system with other general diseases of the body.

Especial attention has been devoted in each edition to the consideration of the autonomic nervous system and those borderline conditions indicated as endocrinopathies. This section of the present edition has been completely rewritten. The general subject has been divided into three essential parts, the one dealing with the physical chemical system, the sec-



ond with the sensormotor system, and the third with the psychic or symbolic systems. In each group the authors point out the special methods of examination, the points of differential diagnosis, and carefully survey the approaches to treatment.

The volume contains a large number of well-chosen illustrations, most of them of a unique character, and all definitely embellishing the text material. We feel that the book is distinctly outstanding in the fields of neurology and psychiatry.

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#### A SYNOPSIS OF REGIONAL ANATOMY

By T. B. Johnston, M.D., Ch.B., professor of anatomy, University of London. Third edition, with eleven illustrations. Lea & Febiger, Philadelphia, 1935. Price, \$4.50.

In terse concise terms, Dr. Johnston has described the anatomy of the human body, in a clear and logical manner. The text is arranged in the logical sequence, of the average course in anatomy, as taught in the medical schools in America and England.

Of interest is the glossary of anatomic names at the beginning of the book, giving both the old and B.M.A. terminology. The text covers the entire human body and has a brief description of the osteology of the body, with the anatomic classification of the ligaments.

The anatomy is described in regions such as one would see in dissection, instead of taking up each division in sections. The embryologic references are described with the subject at hand. The text shows thoroughness, abridgement and adequate review to eliminate unnecessary descriptive matter.

There are not as many illustrations as would appear in the average American text, but the volume should prove of value to any student of anatomy, or any practicing surgeon. D. M. B.

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#### REVIEW OF MEDICAL PROGRESS

Edited by George M. Piersol, M.D., and fifty associate editors. With 89 illustrations. F. A. Davis Company, Philadelphia, 1935. Price, \$10.00.

With the ever increasing medical literature, it has become imperative that the average physician rely upon carefully prepared surveys of current publications in order to keep abreast of the times. During the past few years, several medical publishers have attempted to meet this need. Some have prepared very brief condensations, epitomizing those reports, which in the reviewers mind, are most outstanding for the year. Others have attempted longer reviews, either on a monthly or quarterly plan, while still others have limited their reviews to one particular branch of practice or a limited field of therapy.

Under the able editorship of Dr. Piersol, the F. A. Davis Company has offered in this volume a reference work which is outstanding in this field; first,

the reviews cover the entire field of medical practice; second, they are sufficiently comprehensive to give good insight into the literature reviewed; and third, they are entirely adequate for reference purposes. Medical subjects are discussed in the first section of approximately three hundred pages, while surgical subjects are reported in the following two hundred pages. The remaining 600 pages are devoted to the various specialties including general therapeutics, physical therapy and dietetics. Each discussion is presented under the descriptive heading which allows for full indexing.

"This volume represents an earnest and conscientious effort to make readily available to the medical profession the important and outstanding advances that were made during the last year in the various fields of medicine and surgery."

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#### CLINICAL LABORATORY METHODS AND DIAGNOSIS

By R. B. H. Gradwohl, M.D., director of laboratories, St. Louis County Hospital. With 328 illustrations and 24 color plates. C. V. Mosby Company, St. Louis, 1935. Price, \$8.50.

During the past twenty years, the author of this volume has made noteworthy contributions to our knowledge concerning laboratory procedures and their interpretations. With his vast experience and his many years of study in this particular field it is especially fitting that he should prepare a treatise on laboratory methods and diagnosis.

Believing that the study of the blood is perhaps the most important of all laboratory studies, the author has devoted unusual space and attention to this subject. One full chapter is devoted to blood chemistry and a second chapter to the cytology of the blood. A particularly helpful chapter is that devoted to a discussion of the bacteriologic application to clinical medicine. For the laboratory technician, the chapter on serology will be of great value. The closing chapters of this treatise are devoted to the study of tissues and include a full chapter on postmortem examinations, a separate chapter on tissue cutting and staining, and a chapter on the preparation of museum specimens. The final chapter of the volume reviews those procedures of definite value in toxicology.

The volume should not be confused with the ordinary textbook of clinical pathology, stressing only the more common laboratory procedures, nor, on the other hand, should it be confused with the ordinary guide for technicians in laboratory work. Because of its broad scope and its thoroughness in treatment, it assumes the proportion of a reference atlas, both to the laboratory worker and the physician who carries the interpretation of these procedures to the bedside. The volume is well illustrated with both black and white and colored plates.

## INTERNATIONAL MEDICAL ANNUAL

A Year Book of Treatment and Practitioner's Index. Edited by H. Letheby Tidy, M.D., and A. Rendle Short, M.D. William Wood and Company, Baltimore, 1935. Price, \$6.00.

The International Medical Annual has long been recognized as a carefully prepared authoritative and entirely well chosen survey of the year's advancement in medical science. Those comprising the present editorial staff, with their collaborators, assure the continuation of the high standard established in earlier editions of this work.

In the introductory section the editors present a general and very broad review of the most outstanding contributions in the various fields of medicine and surgery, closing the chapter with the following very illuminating paragraph.

"Altogether, looking back on the published works of this and the preceding year, one derives the impression that the progress of medical knowledge is speeding up, and much of the new information is of first-class importance in practice. It becomes more than ever necessary for the medical man to read, if he is to give his patients what they have every right to expect."

The alphabetical arrangement of the subjects permits the free use of this volume for reference purposes, and the adequate index furnishes cross references to many signs, symptoms or conditions which would not be readily located in the appropriate section.

The many illustrations add definitely to the usefulness of the volume.

## MERCK MEDICAL MEMORANDA

Edited by Bernard Fantus, M.D., professor of materia medica, pharmacology, and therapeutics, College of Medicine, University of Illinois. Published monthly by Merck & Company, Rahway, New Jersey. Subscription, \$3.00 a year.

The Merck Manual of Therapeutics and Materia Medica, published in its sixth edition in 1934, has been previously reviewed in these columns. A new card service presented to the profession under the caption "Merck Medical Memoranda" is intended to supplement and furnish continuous revisions to the Merck Manual.

This revision service consists of a series of twenty-five or more cards published monthly under the editorship of Dr. Bernard Fantus, whose contributions to therapeutics have made his name familiar to every physician. Each card of the series covers one condition in epitomized form, including the reference to the original literature cited in the review. It is

proposed that the physician receiving this service will preserve these cards in a suitable manner and in alphabetical form so that they may be readily available for reference use. A review of some of the releases to date impresses us with the usefulness of this Medical Memoranda. The subjects treated are certainly those demanding the thoughtful consideration of every physician and include those in which our knowledge concerning therapy is undergoing revision.

The editor-in-chief, Dr. Fantus, is to be complimented on the efficient condensations which he has made of timely medical articles, and the publishers are to be commended for the convenient form used in preparing the cards. Certainly, every physician interested in therapeutics—and what physician is not—should address the publishers for additional information concerning this new service in the field of therapeutics and materia medica, and become personally acquainted with the many advantages of the service.

## HUMAN PATHOLOGY

By Howard T. Karsner, M.D., professor of pathology, Western Reserve University, Cleveland. Eighteen illustrations in color, 443 black and white. Fourth edition, revised. J. B. Lippincott Company, Philadelphia and London, 1935. Price, \$10.00.

Since its introduction to the medical profession in 1926, this valuable text has undergone four revisions. In the present edition, the sections dealing with tumors have undergone extensive revision and modernization. The rapid advances in our knowledge concerning the hematopoietic system, the ductless glands, and the nervous system, have necessitated extensive rewriting in these respective chapters. Over three hundred additions have been made in the already extensive bibliography which is introduced at the close of each chapter.

No radical change has been made in the form of presentation and none appears necessary. In the beginning of each chapter, the author tabulates the factual material of the chapter and in his discussion of each individual subject, follows a paragraphic form of presentation. The scheme of pathology presented follows the best modern thought and is given in sufficient detail for the purposes of the student and practitioner.

One of the notable features of this volume is the large number of original illustrations used throughout the text. Many of these have been collected by Dr. Simon Flexner during his long experience in the teaching of pathology and in research. This volume on pathology is a notable contribution to medical science and should enjoy the full confidence of the medical profession.



**A TEXTBOOK OF CLINICAL NEUROLOGY**

By Israel S. Wechsler, M.D., professor of clinical neurology, Columbia University, New York. Third edition, reset; 826 pages with 162 illustrations. W. B. Saunders Company, Philadelphia and London, 1935. Price, \$7.00.

In this, the third edition of his text, Dr. Wechsler has made the revisions and corrections necessitated by the continued growth and consolidation of neurologic knowledge to bring the work thoroughly up to date and has added in this edition a brief but interesting historical section.

The section on the neuroses continues to embody the modern and generally accepted views on the origin, classification and treatment of the functional neurotic conditions. In the main part of the book, that which deals with organic neurology, the author follows his own ideas of classification. Thus all neurologic diseases, regardless of etiology or pathology, are grouped according to their anatomic location in sections on the brain, spinal cord and peripheral nerves.

The book is complete and well written, and since it is based largely on the author's teaching experience, stresses clinical findings rather than controversial or theoretic considerations. R. C. D.

**THE STOMACH AND DUODENUM**

By George B. Eusterman, M.D., head of section in division of medicine, The Mayo Clinic; and Donald C. Balfour, M.D., head of section in division of surgery, The Mayo Clinic. Octavo, 958 pages with 436 illustrations. W. B. Saunders Company, Philadelphia and London, 1935. Price \$10.00

This volume, while edited by Dr. George B. Eusterman and Dr. Donald C. Balfour, represents not only the studies of these two eminent specialists, but also some thirteen others, members of the staff of the Mayo Clinic. A number of special chapters are presented, dealing with the history of diseases of the stomach and duodenum, the physiology of these organs, the research or experimental aspect of the problem, the pathology observed, and the special procedures of x-ray technic required for proper observation of lesions. On this foundation the editors have built into their text all phases of diseases of the stomach and duodenum, their symptomatology, their diagnosis, and their treatment. Inasmuch as many of the conditions in this region require surgery, the surgical technic of the several operations is presented in adequate detail for the guidance of the experienced surgeon. These descriptions are supplemented by numerous carefully prepared line drawings and photographic illustrations. The authors do not claim complete or encyclopedic coverage of this subject, but to the reviewer the completeness of this work, both in scope and in detail, pays high tribute to its editors, especially since the text has been presented in less than one thousand pages. In our opinion this is the

most useful volume on this subject which has appeared in English medical literature.

**THE PATHOLOGY OF INTERNAL DISEASES—**

By William Boyd, M.D., professor of pathology, University of Manitoba, Canada. Second edition, thoroughly revised. Octavo, 904 pages, illustrated with 335 engravings. Lea & Febiger, Philadelphia, 1935. Price, \$10.00.

This work, now in its second edition, covers in a thorough and painstaking fashion all of the more common diseases encountered in hospital practice. It analyzes clinical subjects in terms of pathology and physiology, and guides the reader into a more thorough appreciation of why the various signs and symptoms observed in the given condition are present. The subject matter is arranged by sections, the first two chapters dealing with diseases of the heart and the arteries, the third dealing with the respiratory system, while the fourth deals with the stomach and duodenum. In later chapters the organs of digestion, the kidneys, the glands of internal secretions, and the nervous system receive consideration. Typical of the scheme of presentation may be cited the section on rheumatic disease of the heart. Here the author presents the pathology of rheumatic fever, its etiology, the lesions produced, the relation of symptoms to lesions in rheumatic fever, myocardial and valvular lesions, pericardial lesions, and finally the microscopic picture. Under each heading the author presents the latest developments and observations from the laboratory and the bedside. The volume is generously illustrated by many original photographs.

**THE SEXUAL RELATIONS OF MANKIND—**

By Professor Paolo Mantegazza, translated from the Italian. Eugenics Publishing Company, New York, 1935. Price, \$3.00.

This is the first complete unexpurgated edition in English of this valuable discussion by the well-known Italian authority in sexology. The author has reviewed the sexual responses of man of yesterday, hoping thereby to instruct and better the man of today. While written with unusual frankness, the author has always maintained the attitude of the scientific student of anthropology and his frankness is undeserving of criticism when viewed in this light. No phases of the love life or its manifestations in the primitive races are omitted. The attitudes of civilized man in the evolution of the modern sexual code are developed with meticulous care. His chapter on sexual choice is particularly interesting to the physician, and his chapter on monogamy, polygamy and polyandry is of especial interest to the student of sociology and economics. His final chapter deals with "the future possibilities of love," ending in a prophecy for the future that monogamy will persist and the dignity of marriage will be restored.

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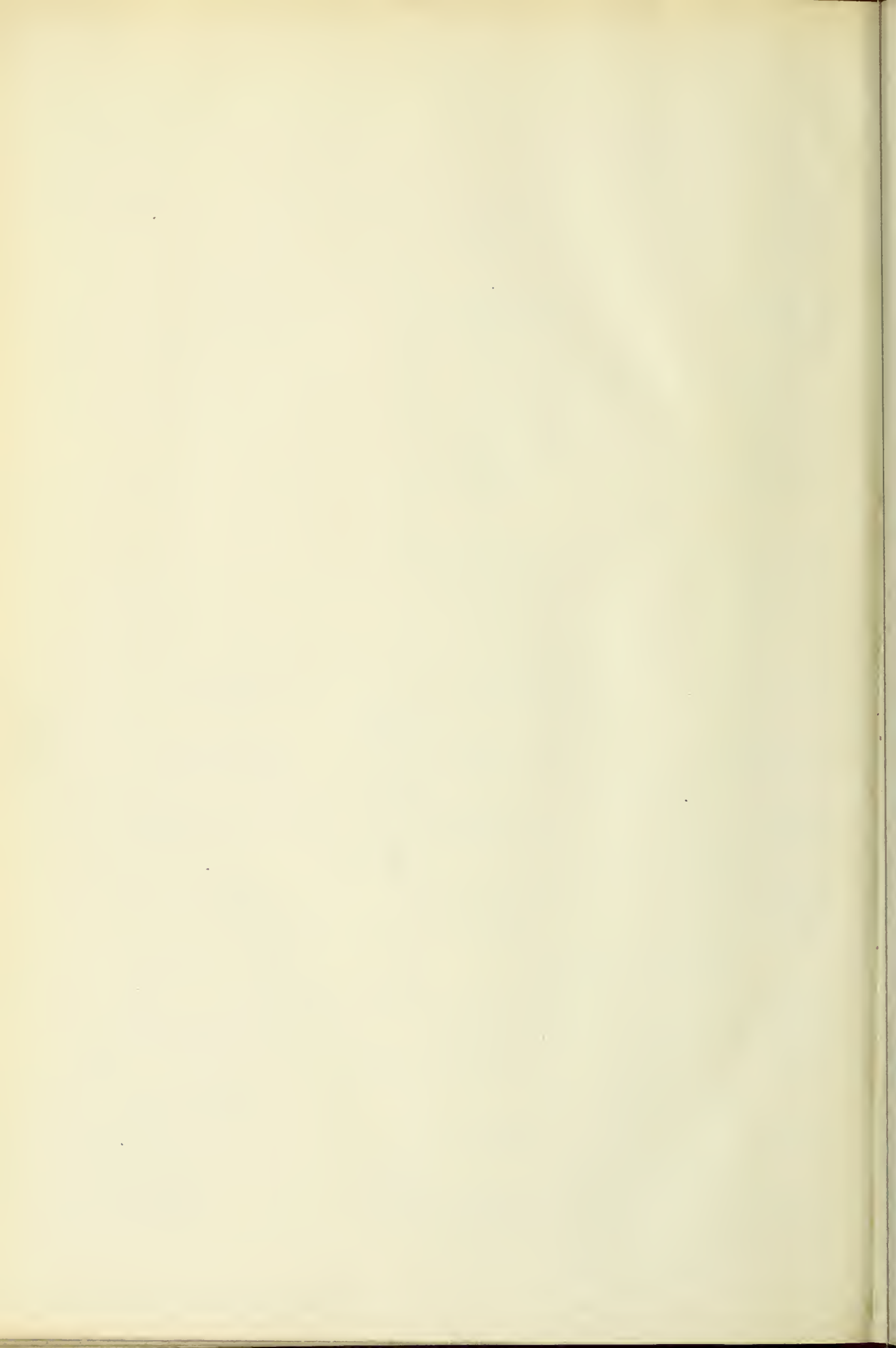
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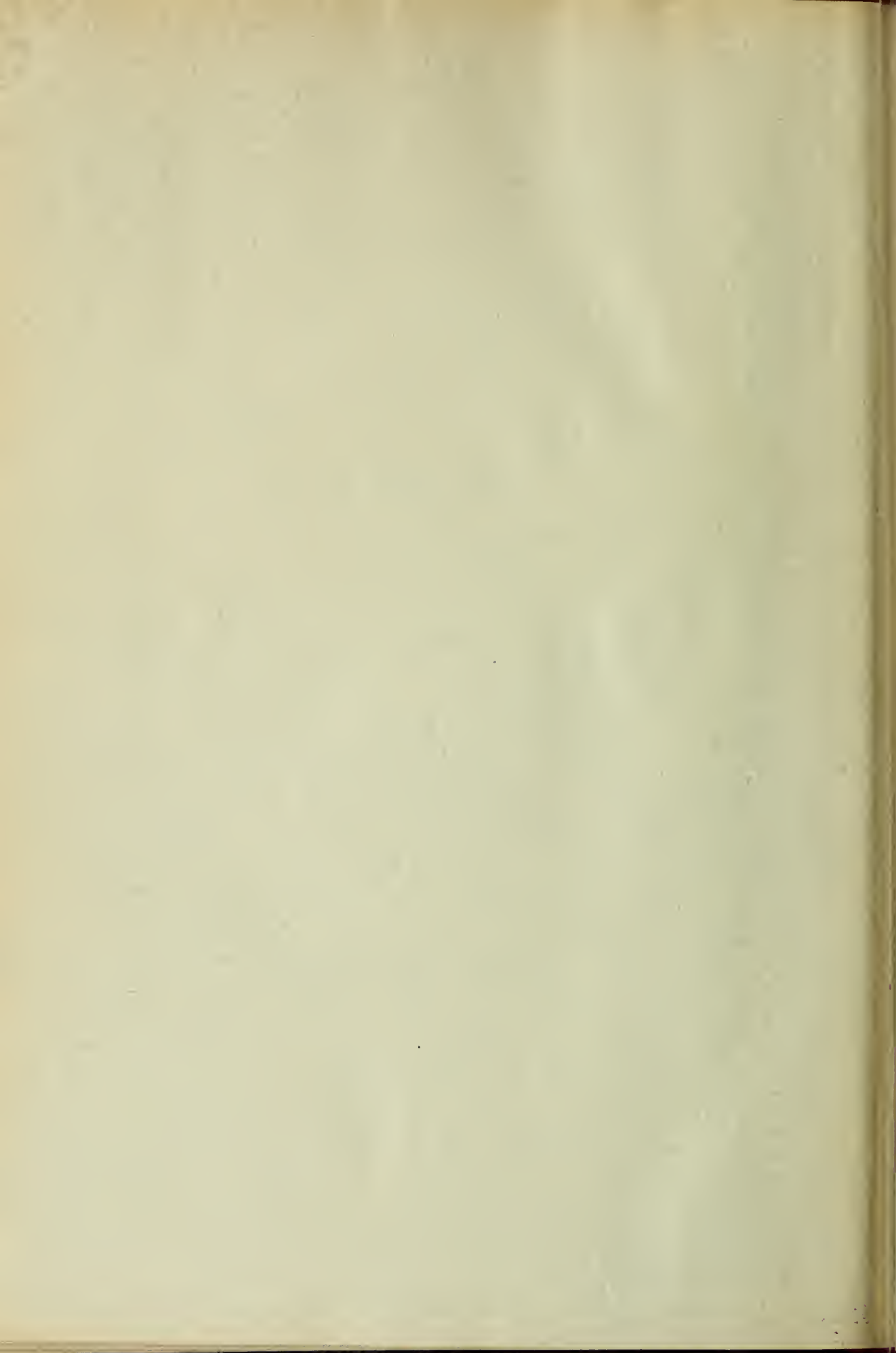














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